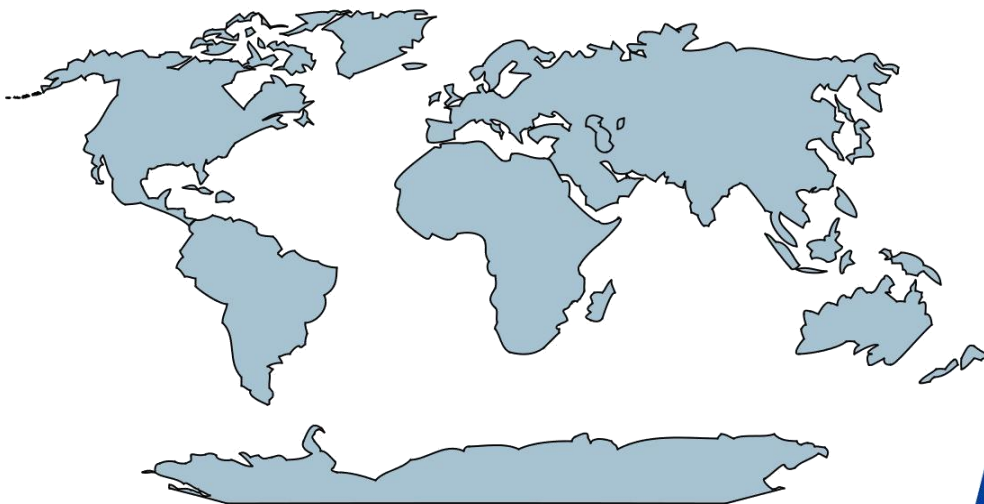


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CONTENTS

Research Papers

- GOLD FUTURES LINKAGES BETWEEN INDIAN AND CHINESE MARKETS** 1 – 6
Ravi Kumar and Dr Babli Dhiman
- AN EMPIRICAL STUDY ON ENTREPRENEURIAL ECOSYSTEM IN CHHATTISGARH DURING COVID-19** 7 - 12
Shailja Bakshi and Dr. Sadhna Bagchi
- THE FUTURE TRENDS OF PROVINCIAL AND LOCAL GOVERNMENT UNDER THAI LAW** 13 – 19
Kandid Sirisarn, Sirivadee Wiwithkhunakorn and Sanya Kenaphoom
- THE ICARUS PARADOX IN THE INDIAN BANKING SECTOR: THE STORY OF YES BANK** 20 – 26
P David Jawahar, S Gayathri, Ankur Agarwal, Paridhi Taparia and Sachin Singh Chauhan
- DISASTER MANAGEMENT IN HIGHER EDUCATION LIBRARIES: A REVIEW OF LITERATURE** 27 – 32
Ranjana Yadav, Dr. Deepmala and Dr. Ashok Kumar Upadhyay
- A STUDY ON PRIMARY LAND DEVELOPMENT BANKS (PLDBS) IN INDIA WITH SPECIAL REFERENCE TO KARNATAKA STATE, INDIA** 33 – 38
Vidya K and Ravindranath N Kadam
- BUY NOW, PAY LATER: THE NEW BUZZWORD IN THE WORLD OF DIGITAL FINANCE AND E-COMMERCE** 39 – 44
Abdul Razack K P and Dr. Jayarajan T K
- THE IMPACT OF THE DIGITAL PLATFORM ON ONLINE LECTURERS AND CLASSES, AS WELL AS THE COLLABORATION OF ORGANIZERS** 45 – 51
Prof Dr Mohammad Asif Pasha and Dr. Kiran Kumar Thoti
- INFLUENCE OF INDO-ISLAMIC CULTURE ON KARNATAKA! 1600-1800 D – A STUDY** 52 – 55
Dr. Rohini Sangappa Dalavay
- ASSESSMENT OF THE EFFECTIVENESS OF INTERNAL AUDIT AS PERFORMANCE FACTOR FOR LOCAL AUTHORITIES** 56 – 61
Sara Amekran and Fadoua Laghzaoui

| | |
|--|-----------|
| THE ANALYSIS OF FINANCIAL DISTRESS TOWARDS MSME OF TENUN IKAT IN EAST NUSA TENGGARA | 62 – 70 |
| Christien C. Foenay and Markus Bunga | |
| CATTLE INSURANCE AND MANAGEMENT IN INDIAN SOCIETY | 71 – 73 |
| Mr. Rathindranath Banerjee and Dr. S Anjani Devi | |
| CLASSIFICATION AND LOCALIZATION OF COVID-19 DETECTION IN CT AND X-RAY IMAGES USING MAX VOTING-BASED ENSEMBLE LEARNING | 74 – 81 |
| Anitha S, Abishek V, Gokula Krishnan K and Hariharan S | |
| ANTIMICROBIAL ACTIVITY OF ENDOPHYTIC STREPTOMYCES STRAIN KCA2 ISOLATED FROM PHYLLANTHUS NIRURI | 82 – 87 |
| S. Ayswarya, M. Radhakrishnan* and K. Manigundan | |
| CONSUMER PROTECTION ACT, 2019: AN OVERVIEW | 88 – 91 |
| Dr. Upender Sethi | |
| STUDY OF FOREIGN LANGUAGE TEACHING AND LEARNING PEDAGOGY DURING PANDEMIC SITUATION | 92 – 95 |
| Tanuja Yadav | |
| POST-HARVEST DETERIORATION OF CASSAVA: A PHYSIOLOGICAL REVIEW AND MITIGATION STRATEGIES | 96 – 98 |
| Wazis. D.H, Abdul. I.M and Kamilu. M | |
| EVALUATION OF DEVOPS KEY SKILLS OF DEVOPS ENGINEERS - AN EMPIRICAL STUDY. | 99 – 103 |
| Sanjay Kumar Dhar | |
| FAMILY AND SELF-ESTEEM IN COPING WITH BULLYING: A STUDY OF LUCY MONTGOMERY'S <i>ANNE OF THE GREEN GABLES</i> | 104 – 111 |
| Lamiaa Ahmed Rasheed and Isra'a Izat Mohammed | |
| IMPACT OF CAPITAL STRUCTURE ON FINANCIAL PERFORMANCE: A STUDY OF SELECTED TELECOMMUNICATION COMPANIES IN INDIA | 112 – 115 |
| Miss. Divya Harwani | |
| SOCIAL AND CULTURAL ASPECTS IN URBAN SUSTAINABILITY: A CASE OF ALOE VILLAGE IN MANALI | 116 – 120 |
| Aniket Sharma and Vandna Sharma | |
| FORMS OF FINANCIAL INFORMATION PRESENTATION IN DECISION MAKING: DOES THE APPEARANCE OF FINANCIAL STATEMENTS AFFECT THE PERCEPTION OF THE READERS? | 121 – 129 |
| Dini Rosdini, Prima Yusi Sari and Gia K.P. Amrania | |

| | |
|--|-----------|
| FOSTERING MUSIC THERAPY IN ENHANCING SOCIAL SKILLS TO PROMOTE ACADEMIC GROWTH IN CHILDREN WITH AUTISM SPECTRUM DISORDERS IN AN INCLUSIVE CLASSROOM SETTINGS | 130 – 137 |
| Fr. Baiju Thomas | |
| METHODOLOGY TO ENHANCE THE SATISFACTION INDEX FOR IT USERS AT UPES | 138 – 145 |
| Gagan Deep Singh and Jatender Sharma | |
| 19th CENTURY BELGAUM -SOCIAL CULTURAL GROWTH - A CRITICAL STUDY: | 146 – 149 |
| Kakasaheb Laxman Gasti and Dr. S. Y. Mugali | |
| GENERALIZED SECOND ORDER DIFFERENCE EQUATION AND INFINITE FIBONACCI | 150 – 155 |
| Brightlin. D and Dominic Babu. G | |
| GREEN MARKETING: AN ANALYSIS ON CONSUMER BEHAVIOUR TOWARDS GREEN PRODUCTS | 156 – 160 |
| Andrea Varghese, Silpa M.A and Dr.Umesh U | |
| GLOBAL STATISTICAL DATA: ACCEPTANCE ON HOMOSEXUALITY | 161 – 165 |
| Monika Rajendra Sawant | |
| ENVIRONMENTAL MANAGEMENT ACCOUNTING IN AUTOMOBILE INDUSTRY IN CULTURAL CAPITAL OF KERALA - AN INSTITUTIONAL THEORY APPROACH | 166 – 173 |
| Remya S and Dr G.S Sandhya | |
| EDUCATIONAL AND INTELLECTUAL GROWTH OF BELGAUM DISTRICT DURING COLONIAL PERIOD. (1818-1947) | 174 – 180 |
| Kakasaheb Laxman Gasti and Dr. S.Y. Mugali | |
| KARATE TRAINING BENEFITS FOR GIRLS | 181 – 182 |
| Nagaraja D and Virupaksha N. D | |
| PERCEPTIONS OF UNDERGRADUATE AND GRADUATE EFL STUDENTS ON FACTORS AFFECTING SUCCESS IN ONLINE ENGLISH CLASSES | 183 – 189 |
| Riccardo Minasi | |
| A RESEARCH PROJECT ON RESTRUCTURING FOREIGN POLICY IN A ‘FROZEN’ SOUTHEAST: AN ANALYSIS OF THE MOLDOVA-TRANSNISTRIA CONFLICT AS A DIRECT CONSEQUENCE OF POLITICIZED REGIONALISM OF EASTERN EUROPE’S GEO SECURITY ISSUES IN THE LIGHT OF THE TRANSNATIONAL DIMENSIONS OF A PRAGMATIC SOVEREIGN ECONOMY | 190 – 198 |
| Lopamudra Ghosh | |
| PROVISION AND UTILIZATION OF INFORMATION RESOURCES, SERVICES AND FACILITIES AMONG POSTGRADUATE STUDENTS IN AGRICULTURE UNIVERSITY LIBRARIES IN SOUTH WEST NIGERIA (UI, FUAU, OAU) | 199 – 209 |
| Mohammed Tukur Lawal and Nafi’u Maharazu | |

| | |
|--|-----------|
| PULSED ELECTROMAGNETIC ENERGY TREATMENT SCOPE AND CHALLENGES | 210 – 213 |
| Piyush Fauzdar, Dr. Pushpendra Yaduvanshi and Dr. Priyanka Kawat | |
| DRINKING WATER INSUFFICIENCY: A CASE STUDY OF KODALI PANCHAYAT IN KANNUR DISTRICT | 214 – 218 |
| Dr. Savitha K L and Dr. Srinivasan K | |
| AN INVESTIGATION ON THE DIMENSIONS OF SPIRITUALITY | 219 – 228 |
| Dr. Ajit Singh Negi | |
| THE EFFECTIVENESS OF E-LEARNING AMONG SCHOOL STUDENTS IN THRISSUR DISTRICT | 229 – 233 |
| Silpa M A, Andrea Varghese and Dr. Umesh U | |
| STUDY ON MOVEMENT PATTERNS IN AN EDUCATIONAL INSTITUTE USING SPACE SYNTAX | 234 – 241 |
| Aniket Sharma and Vandna Sharma | |
| EXPLORING THE SOCIAL INNOVATION FACTOR OF THE ART-CREATION IN PAINTING ENTERPRISES | 242 – 246 |
| Szu-Yao Lin | |
| A SUCCESS AND FAILURE OF AGRI-ENTREPRENEURSHIP ON COVID-19 IN MYSORE DISTRICT | 247 – 250 |
| Mr. Manjunatha Sharma R H and Dr. H. M. Chandrashekar | |
| A STUDY ON CLOTHING PURCHASING BEHAVIOR BY WOMEN WITH RESPECT TO APPAREL STORES | 251 – 260 |
| Dr. A. Suganya and Dr. K. Ganesamurthy | |
| SUSTAINABILITY ISSUES IN URBAN DESIGN OF ALOE VILLAGE: A CASE OF MANALI | 261 – 265 |
| Vandna Sharma and Aniket Sharma | |
| A FAST FAULT DETECTION AND IDENTIFICATION APPROACH IN POWER DISTRIBUTION SYSTEM | 266 – 272 |
| Priya Bhagat and Shelly Bhanot | |
| COVID-19 AND PROBLEMS IN TEACHING AND LEARNING THAI LANGUAGE IN ELEMENTARY SCHOOL, THAILAND | 273 – 279 |
| Wachirarat Nirantechaphat | |
| ROLE OF MFIS IN EMPOWERMENT OF RURAL AREA – A CASE STUDY OF SAGARA TALUK, SHIMOGA DISTRICT | 280 – 286 |
| Ms. Krupa V.D. and J. Madegowda | |
| WILL CONSUMER PSYCHE MUTATE WITH PANDEMIC - CONSUMER INSIGHTS WITH ARTIFICIAL INTELLIGENCE | 287 – 302 |
| Dr Vanishree Pabalkar and Dr Ruby Chanda | |

| | |
|---|-----------|
| ETHANOL PRODUCTION IMPACT ON THE PERFORMANCE OF SUGAR INDUSTRY | 288 - 307 |
| Ms. Akshata Chavan and Dr. Shraddha Kokane | |
| CUSTOMER SATISFACTION IN PUBLIC SECTOR BANKS: A CASE STUDY OF PUNJAB NATIONAL BANK | 308 – 310 |
| Anamika Samnani and Dr. Prem Shankar Dwivedi | |
| STATUS OF GROUNDWATER ARSENIC CONTAMINATION IN RANGIA CIRCLE, ASSAM, INDIA | 311 - 314 |
| Tirthankar Sarma and Dr. Sailajananda Saikia | |
| AN UPDATE OF THE POSSIBLE APPLICATIONS OF MAGNETIC RESONANCE IMAGING (MRI) IN DENTISTRY: A LITERATURE REVIEW | 315 |
| Rodolfo Reda, Alessio Zanza, Maurilio D'Angelo, Luca Testarelli and Dario Di Nardo | |
| SOVIET MODEL OF EDUCATION IN KYRGYZSTAN (1917-1990): A HISTORICAL PERSPECTIVE | 316 |
| Nasir Nabi and Shabnum Qadir | |
| A CLINICAL STUDY IN THE MANAGEMENT OF DIABETIC FOOT ULCER WITH JALAU KAVACHARANA | 317 |
| Dr. Devyani Dasar (Jaiswal) | |
| IMPACT OF LABELLING & PACKAGING IN CREATING POSITIVE IMPRESSION OF THE BRAND AMONG CONSUMERS | 318 |
| Ritu Mudgal and Dr. Priyanka Singh | |
| EFFECT OF MULCHING ON HARVEST INDEX OF GARDEN BEAN | 319 – 321 |
| Mullaimaran and Haripriya | |
| STANDARDIZATION OF ORGANIC PRACTICES FOR QUALITY ENHANCEMENT IN GARDEN BEAN | 322 – 323 |
| Mullaimaran and Haripriya | |
| EFFECT OF MULCHING ON ECONOMIC BENEFITS OF GARDEN BEAN | 324 - 326 |
| Mullaimaran and Haripriya | |
| AN INVESTIGATION ON CUSTOMER SATISFACTION AND SERVICE QUALITY IN PRIVATE SECTOR BANKS | 327 – 333 |
| Dr. Rakesh Garg | |

GOLD FUTURES LINKAGES BETWEEN INDIAN AND CHINESE MARKETS

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ABSTRACT

Gold futures trading in the emerging and developed nations have been of prime importance among the commodities. This paper aims to determine the linkages between the Indian and Chinese gold futures markets by finding the return and volatility spillover effects. Using weekly data from 1 April 2009 to 31 March 2021, granger causality is found using the Toda Yamamoto approach. VAR (1) GARCH (1,1) model is used to know the spillover effects in the return and volatility of the markets. The granger causality result suggests a unidirectional causal relationship from MCX (Multi Commodity Exchange) to SHFE (Shanghai Futures Exchange). The estimates of the mean equation of VAR (1), GARCH (1,1) also state that the return in the Chinese market is unidirectionally impacted by the returns in the Indian market. Further, there is bidirectional volatility spillover between the markets. Overall, the results suggest that there is significant information transmission between the markets. The paper finds its importance in studying the linkages of the precious metal futures in the two largest emerging economies.

Keywords: futures market, spillover, volatility, granger causality

1. INTRODUCTION

Precious metal tends to follow a systematic relationship irrespective of demand and supply (Al-Yahyaee, Mensi, Maitra, & Al-Jarrah, 2019). The different precious metal has a different and changing nature in term of safe-haven properties during times of shocks in oil prices (Shahzad, Rehman, & Jammazi, 2019). Gold and silver are the most important among the precious metal. Especially in India, these metals find a place in the portfolio by virtue of sentiments too. India is the largest gold consuming country despite China being the largest producer. These metals are also the most researched among precious metals compared to platinum and palladium (Vigne, Lucey, O'Connor, & Yarovaya, 2017). Gold spot and futures prices in India are found to have a long-run relationship, and the futures market has a daily contribution in the price discovery; However, the futures market seems to be a failure in establishing itself as an efficient hedging instrument against spot prices (Nath, Dalvi, Pawaskar, Rajaram, & Pacheco, 2019). Pavabutr & Chaihetphon (Pavabutr & Chaihetphon, 2010) studied the efficiency of MCX India in the price discovery of Nascent gold by analyzing the data from 2003 to 2007 using the Vector Error Correction model. The result of the Johansen cointegration test is found to be supported by a vector error correction model. Two types of contracts of gold, which are mini and standard, are leading the cash price of gold. When it comes to the efficiency of futures of gold commodity, it is noteworthy that mini contract of gold, which accounts for only 2% of trade in terms of value, contributes 30% in the price discovery process. By this finding, the author asserts that even mini contracts that provide affordability to retail investors are efficient in the price discovery process. Retail investors, through the mini-sized contract, are trading frequently and reacting to new information. So, a larger market share in trading value should not always be concluded as having a larger share in price discovery. Overall, the authors have advocated the existence of a developed gold futures market in India (Mukherjee & Goswami, 2017). Unlike industrial metals having a weak correlation with crude oil, India's gold and the silver market suffered no upward and downward movement during the 2008 financial crisis (Kaushik, 2018).

In China, SHFE introduced gold futures in the year 2008. Xu, Norden, & Hagstromer (2010) found the newly introduced gold futures of China to have satisfactory hedging effectiveness using data from January 2008 to February 2010. Chinese gold proved to be a safe haven asset as return spillover between gold and stock or oil has been found to be negligible (Ahmed & Huo, 2021). In emerging countries, gold and stocks are best to hedge each other as both of them lose the pattern to predict each other (Tiwari, Adewuyi, & Roubaud, 2019). There has been a strong dependence between spot and futures return of precious metals in the international market, including platinum, gold and silver. It suggested that future returns' past information could be used to forecast the spot returns (Talbi, de Peretti, & Belkacem, 2020).

The study of gold in emerging economies like BRIC countries along with Taiwan, Turkey, Indonesia and Korea reveals that these markets are becoming more integrated as variables are found to be cointegrated, and causality is bidirectional in nature (Baklaci, Süer, & Yelkenci, 2018). A previous study of gold in emerging markets by the same group of authors reports the existence of volatility linkages among the countries (Baklaci, Süer, & Yelkenci, 2016). Bidirectional volatility spillover is also found between the gold futures markets of India

(MCX) and the US (NYMEX), along with a long-run relationship between them (Sinha & Mathur, 2016). For the price linkage in the short run in gold and silver markets of US and Japan futures market, causality test suggests the dominance of US market over Japanese market, as it leads the price in Japan futures market. Risk spillover is found to be extreme between Shanghai and London Gold futures markets in the pre and post-crisis periods (Wang, Xie, Jiang, & Stanley, 2016).

The study of the linkage of commodity futures in the emerging economies has been a lesser-explored area. Gold is the most important precious metal in terms of its trading, global liquidity, industrial uses and jewellery making. This article intends to know the granger causality and spillover effects between the gold futures markets of India and China. The rest of the article contains data and methodology, results and discussion and finally, the conclusion.

2. DATA AND METHODOLOGY

2.1 Data

Official websites of MCX (India) and SHFE (China) has been used to collect data. Weekly data will be collected for 12 years from 1 April 2009 to 31 March 2021. With the advantage of getting enough observation for analysis, taking weekly data helps avoid irregular trading days and zero-trade volume problems as encountered in daily data (Ge, Wang, & Ahn, 2010). For preparing the continuous data of futures contracts, the front or spot month method has been used for gold futures at MCX. For gold futures at SHFE, only June and December month contracts have been considered following the methodology of Jin, Li, Wang, & Yang (2018) and Jiang, Kellard, & Liu (2020) as only these two contracts are the most liquid. For the first four months of the year, we consider the closing price of the June contract, and from May to October, the December month contract is considered. For the last two months of the year, the June month contract of the following year is approached.

2.2 Toda- Yamamoto Approach for Granger Causality Test

The Toda-Yamamoto method, introduced by Toda & Yamamoto (1995), is an improvement over the traditional Granger causality test. The validity of this test is independent of the order of integration of the series. This method is free from the bias associated with the unit root testing and cointegrating properties of the variables. This test uses an augmented SVAR $k+D_{\max}$, which generates asymptotic VAR static in the form of Chi-square distribution where k is the optimal lag length and d_{\max} is the maximum order of integration.

A VAR model is created in the levels of the data, regardless of the level of integration of the data. Using AIC, optimal lag length is also found and recorded.

The equation for Granger-causality can be estimated by following the VAR model.

$$Y_t = \alpha_0 + \alpha_1 Y_{t-1} + \dots + \alpha_p Y_{t-p} + \theta_1 X_{t-1} + \dots + \theta_p X_{t-p} + \epsilon_t \quad (1)$$

$$X_t = \beta_0 + \beta_1 X_{t-1} + \dots + \beta_p X_{t-p} + \gamma_1 Y_{t-1} + \dots + \gamma_p Y_{t-p} + V_t \quad (2)$$

Null hypothesis of equation (1), (H_0): $\theta_1 = \theta_2 = \dots = \theta_p = 0$, which implies X_t does not granger cause Y_t . Similarly for equation (2), null hypothesis is: $\gamma_1 = \gamma_2 = \dots = \gamma_p = 0$, which implies Y_t does not granger cause X_t .

2.3 VAR GARCH Model

The VAR GARCH model is a restricted VARMA GARCH model proposed by Ling & McAleer (2003). VAR GARCH models are also free to suffer from identification or cancellation problems (Lutkepohl, 2005). Mathematically, the mean equation of the VAR model is written as

$$Y_t = \mu + \Phi y_{t-1} + \epsilon_t$$

Where y_t is (I_t, C_t) the return of Indian gold futures and chinses gold futures. ϵ_t denotes the $(\epsilon_t^i, \epsilon_t^c)$ residual terms of the mean equations from Indian and Chinese market returns.

$$\epsilon_t = D_t \eta_t$$

where η_t (for both the mean equations) is a sequence of independently and identically distributed random vectors and $D_t = \text{diag}(h_t^{i/2}, h_t^{c/2})$, where $h_t^{i/2}$ and $h_t^{c/2}$ are the conditional variances of both the return series for any commodity futures.

The variance equation of the model is as below.

$$h_t^i = \mu_i^2 + \beta_{i1}^2 h_{t-1}^i + \alpha_{c1}^2 (\epsilon_{t-1}^i)^2 + \beta_{i2}^2 h_{t-1}^c + \alpha_{i2}^2 (\epsilon_{t-1}^c)^2 \quad (3)$$

$$h_t^c = \mu_c^2 + \beta_{c1}^2 h_{t-1}^c + \alpha_{i1}^2 (\epsilon_{t-1}^c)^2 + \beta_{c2}^2 h_{t-1}^i + \alpha_{c2}^2 (\epsilon_{t-1}^i)^2 \quad (4)$$

Where $(\varepsilon_{t-1}^c)^2$ and $(\varepsilon_{t-1}^i)^2$ shows the impact of shock transmission between Chinese and Indian markets, respectively, in the short run. The coefficient associated with this (α) is called the ARCH term. Similarly, h_{t-1}^c and h_{t-1}^i represent the impact of lagged value (at time t-1) of conditional variance. In other words, h_{t-1}^c and h_{t-1}^i are to study the long-run persistence of the volatility shock from the Indian market to the Chinese market and vice versa. The associated coefficient β is called the GARCH term in the model. In this way, the VAR model of GARCH allows predicting the current volatility of one market by including the past volatility and shock from both the markets in the model.

3. RESULTS AND DISCUSSION

Table 1: ADF Test Results and optimal lag length for Gold Futures

| Variables | At Level | | | At First Difference | |
|---|-------------|---------|--|---------------------|---------|
| | T-statistic | P-value | | T-statistic | P-value |
| IGOLD | -1.89246 | 0.336 | | -25.0202 | 0 |
| CGOLD | -1.91639 | 0.3248 | | -25.6728 | 0 |
| Note: results are based on SIC criteria | | | | | |

For the granger causality analysis, the maximum level of integration and optimal lag is required to be known. From the ADF test results presented in table 1, the maximum level of integration is decided to be 1. Optimal lag using the VAR framework is reported to be 6. The augmented VAR model is prepared using the sum of the maximum level of integration and optimal lag length. Table 2 reports the results of the Toda- Yamamoto Granger causality test. The null hypothesis of the granger causality test is no granger causality from one variable to another.

Table 2: Toda- Yamamoto Granger Causality Test Result for Gold Futures

| Dependent variable | Independent variable | Chi-square | DoF | P-value |
|--------------------|----------------------|------------|-----|---------|
| | | | | |
| IGOLD | CGOLD | 1.792039 | 6 | 0.9378 |
| CGOLD | IGOLD | 112.4862 | 6 | 0 |

The results report that the P-values are less than 5 % in the case of testing the Granger causality from the Indian exchange (MCX) to the Chinese exchanges (SHFE). This implies that the MCX Granger cause SHFE. On the contrary, gold futures at SHFE does not granger cause gold futures at MCX. So, the granger causality between the markets is found to be unidirectional in nature, and the direction is from MCX (India) to SHFE (China).

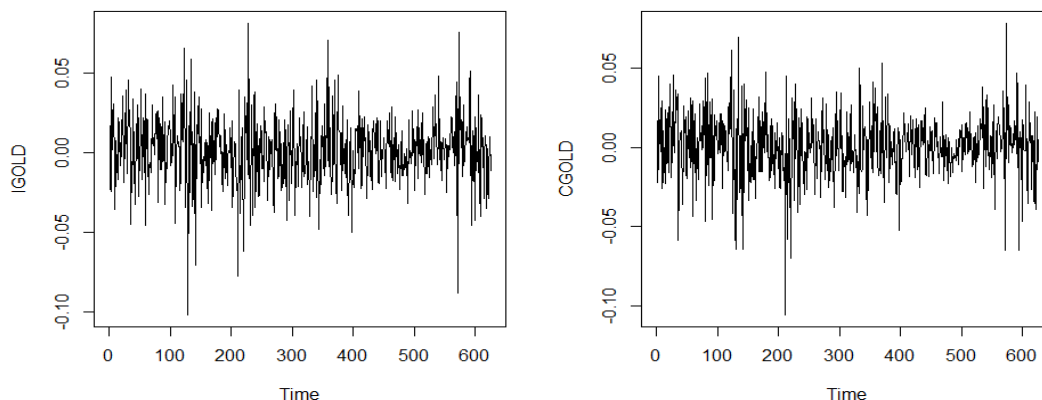


Fig1: Time Series Plot of Returns Series

Before estimating the VAR (1) GARCH (1,1) results, stochastic properties and descriptive statistics of the returns series are studied. Results for descriptive statistics along with stationarity test, autocorrelation test and ARCH effect have been presented in table 3.

Table 3: Descriptive Statistics of Returns Series

| | Mean | Std. Dev. | Skewness | Kurtosis | Jarque-Bera | ARCH LM | AUTCORR. LM/BG |
|-------|----------|-----------|----------|----------|-------------|-----------|----------------|
| IGOLD | 0.001194 | 0.021185 | -0.2344 | 4.97423 | 107.2247*** | 33.102*** | 67.869*** |
| CGOLD | 0.001047 | 0.020933 | -0.3949 | 4.85497 | 105.8517*** | 55.199*** | 71.054*** |

The mean returns for gold futures are higher at the Indian exchange. The returns series are negatively skewed, indicating extreme losses. Kurtosis is also more than 3 for all the variables showing the leptokurtic distribution of the returns. Furthermore, the Jarque-Bera test statistics are highly significant for all the variables suggesting rejection of the normality hypothesis assumption. The ARCH effect is also evidenced for most of the series by using the ARCH LM test. Similarly, autocorrelation test results on the regression of variables show the presence of autocorrelation in the error term for most of the regressions using OLS estimation. Figure 1 represents the time-series graph of the variables showing volatility clustering in the series. Periods of low volatility are followed by low volatility, and periods of high volatility are followed by high volatility. In other words, the return series show clustering of volatility, making the series fit for estimation using GARCH models.

Table 4: VAR (1) GARCH (1,1) Results for Gold Futures

| Mean eq | Gold | |
|---------------------------|------------|--------------|
| | IGOLD | CGOLD |
| IGOLD (-1) | -0.0275 | 0.4610004*** |
| CGOLD (-1) | -0.058267 | -0.323411*** |
| Variance eq | | |
| Constant | 0.0004*** | 0.0003*** |
| $(\varepsilon_{t-1}^i)^2$ | 0.2209*** | 0.1989*** |
| $(\varepsilon_{t-1}^c)^2$ | 0.1521*** | 0.1402*** |
| h_{t-1}^i | -1.4146*** | -1.8857*** |
| h_{t-1}^c | 1.4653*** | 2.0867*** |
| R(2,1) | 0.715*** | |

VAR (1) GARCH (1,1) model has been estimated to know return spillover and volatility spillover between the gold futures markets. The result has been presented in table 4. The mean equation results include variables name followed by (-1), representing the effect of one period lagged return of that variable. In the mean equation of the model, the mean returns in both markets are shown to be affected by the lagged return of the own market and the lagged return of the other market. In this way, the returns series from both markets are endogenous variables in the equations.

Gold futures of Indian markets are not significantly affected by their past return and the past return from the Chinese markets. On the other hand, Chinese gold futures returns show a significant impact from its own lagged return and lagged return from Indian markets. This is to interpret that there is no return spillover from the Chinese market to the Indian market; on the other hand, Chinese gold futures is found to have significant spillover from Indian markets. The impact of own lagged return shows the short-term predictability in the Chinese market. The unidirectional effect from India to China is supported by the findings of the Granger causality test.

The ARCH terms are GARCH terms that are statistically significant for both variables. In the Indian markets, the ARCH term (own past unexpected shock) and the GARCH terms (own past conditional volatility) are found to be highly significant. This indicates that the Indian market returns have a significant effect from its past shock and past conditional volatility. The ARCH coefficient is quite less than the GARCH term indicating the effect of own past shock is quite less than the effect of own past conditional volatility. In other words, the market is more sensitive to its past conditional volatility. Further, the spillover of volatility in the Indian market from the Chinese market is significant. The volatility in the Indian market is sensitive to the past shocks from the Chinese markets. The GARCH term indicating cross volatility spillover from the Chinese market is also significant. So, there is a significant transmission of information from Chinses to the Indian market.

In the Chinses markets, the ARCH terms indicating the effect of its own past the unexpected shock and the GARCH terms indicating the impact of its own past conditional volatility are found to be highly significant. This indicates that the Chinese market returns have a significant effect from its past shock and past conditional volatility. The ARCH coefficient is quite less than the GARCH coefficient indicating the effect of own past shock is quite less than the effect of own past conditional volatility. In other words, the futures market in the Chinese market is more sensitive to its own past conditional volatility. Also, it is important to note that the impact of own past conditional volatility and own past shocks are positive and significant.

Further, the results state that volatility spillover in the Chinese market from the Indian market is significant. The high significance of the ARCH term from the cross-market states that the gold futures are sensitive to the past shocks from the Indian markets. Similarly, the high significance of the GARCH terms indicates that the cross volatility spillover from the Indian market is also significant. So, the Chinese market volatility has a significant impact from the Indian market volatility.

Overall, summarizing the results about the cross-market spillover of return and volatility in the Indian and Chinese metal futures markets, the findings are as follows.

1. The gold futures return in the Indian markets have been affecting the Chinese futures markets unidirectionally. The results interpreted are quite supportive of the findings of Granger causality.
2. Again, about the volatility spillover, the markets show bidirectional volatility spillover. Moreover, the unexpected shock from the cross-market is significant. So, overall, the variance equation indicates significant volatility and shock spillover between Indian and Chinese gold futures markets.

4. CONCLUSION

Gold is the most important precious metal for its global liquidity, acceptability. In times of crisis, gold is said to be a haven asset. Trading in gold has existed since time immemorial. This article addresses the issue of granger causality and spillover in returns and volatility among the two largest emerging economies, India, and China. Gold futures traded at MCX (India) and SHFE (China) are studied for 12 years for a granger causal relationship and spillover effects. The results state that there is unidirectional Granger causality from MCX to SHFE. There is a significant return spillover between the market from India to China, but not in the reverse direction. The result also suggests a bidirectional volatility spillover between the markets. Therefore, investors may find limited hedging opportunities in the gold futures trading in emerging economies. The study is limited to the gold futures. Other important precious and industrial metals could be studied for the linkages among emerging economies.

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AN EMPIRICAL STUDY ON ENTREPRENEURIAL ECOSYSTEM IN CHHATTISGARH DURING COVID-19

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ABSTRACT

To pour out the impact of COVID-19 on Entrepreneurship, its blooming and growth of start-up in the state of Chhattisgarh, we conducted this survey on more than hundred small scale startup businesses during the period of April 2020 – December 2021. This COVID-19 outbreak is a sharp reminder that pandemics, like other rarely occurring disasters, have happened in the past and will continue to happen in the future. Even if we cannot prevent dangerous viruses from emerging, we should prepare to dampen their effects on society. The current outbreak has had severe economic consequences across the globe, and it does not look like any country will be unaffected. This not only has consequences for the economy; all of society is affected, which has led to dramatic changes in how businesses act and consumers behave. We saw firstly huge cut back and unemployment just a few weeks into the crisis or within a very short period of time. But we noticed a considerable development in Small businesses, Start-ups and Entrepreneurship, Moreover as being a Mini India and full of resources, State Chhattisgarh also emerged in the Startup Industry. In fact in the situation of COVID-19 outburst Chhattisgarh explored and nourished a lot in startup Sectors. In this analytical study we will understand the growth and development of the Entrepreneurship environment in Chhattisgarh state.

Keywords: Entrepreneurship, Startup, pandemic, Eco-system, parameter

INTRODUCTION

Chhattisgarh came into existence after bifurcation from state Madhya Pradesh in the year 2000. It is also renowned as the rice bowl of India and tribal tourism. Chhattisgarh is the fastest growing state in the field of industrialization, innovation and Research. In this Covid During the coronavirus (COVID-19) crisis, start-ups have continued to play a critical role for economies. Some innovative young firms have reacted fast and flexibly to the pandemic, and have been critical in helping many countries shift towards fully-digital work, education, and health services, and have provided innovations in medical goods and services (Report of OECD on Covid-19 and startups, 2020).

This state has a strong ecosystem for educational development, Health and Medical Services and in manufacturing concerns also. As a new emerging state full of minerals, resources and ample opportunity to develop in every way. The Government of Chhattisgarh recognises a new phase in which startups will be the engine for social innovation and, in the long run, the dominating job creators. By using science and technology, the state intends to become a global epicentre of entrepreneurship and innovation, fostering sustainable and inclusive growth and boosting global competitiveness. In 2016, the state government announced the 'Chhattisgarh Innovation & Entrepreneurship Development' policy with the objective of creating a conducive environment for innovation and entrepreneurship in the state.

Startup Ecosystem in Chhattisgarh : Ministry of Incubation centres and Accelerators -Under the programme, the state has built three types of incubator/accelerator centres, focusing on technology, micro, small, and medium enterprises (MSME), and all other sector-agnostic firms.

1. Indira Gandhi Krishi Vishwavidyalaya (IGKV)
2. AIC@36INC
3. RKVY-RAFTAAR Agri-Business Incubator
4. Shri Shankaracharya Technical Campus Business Incubator

Prototype shops and Co-Working Space - Set up of shared facilities for all incubators for component fabrication and prototyping studios, including plastic and electronics laboratories, a machine shop, lesser cutters, welding stations, a textile department, a metal working shop, a wood shop, and a water jet cutter, among other prototyping setups.

To promote equitable and sustainable socio-economic growth, the state has built co-working spaces in the incubator-cum-accelerator for engineers, social entrepreneurs, government, technology firms, and impact investors.

Funding and Support system - Government funding for development of Start-Up

- Govt. of India reimburses 100% of space rent and economy class air fare to women entrepreneurs, in case of participation in international exhibitions /fairs
- Govt. of India provides Start up packages as per the Industrial Policy.
- 100% concessions are provided for electricity charges by SSI manufacturing.
- Free Stamp duty for purchasing or leasing Land.

Educational and skill development -For skill development, plan to encourage Institutes, Colleges and Universities to take initiative to develop the concept of entrepreneur in residence.

Successful entrepreneurs most typically hold the role of Entrepreneur in Residence (EIR) in venture capital companies, private equity firms, startup accelerators, law firms, or business schools. To encourage chosen student entrepreneurs to pursue their innovations/start-up ideas, the state has launched an internship and fellowship programme. The state encourages entrepreneurship by providing Innovation Kits and Start-up Toolboxes, as well as hosting boot camps at schools and institutions.

Market linkage - During prototype and market testing, the state ensures that corporate and state interactions are facilitated. The state connects entrepreneurs with industry investors so that they could invest in innovative solutions that were made with the help of customers. The state needs to conduct an annual startup event to showcase the skills of young talent who will be recognised on a state level.

Public Private Partnership -Entrepreneurship Awareness Programme was organized in the Chhattisgarh State. There are 45 Nos. of candidates participated out of which 40 male participants and 5 female participants . The participants were trained to become entrepreneurs.

Focus Areas for Development - The state has identified following areas as innovative business areas and is in the process of creating a special policy/ regulation to promote startups working in these areas. These include:

| | | |
|--|--|---|
| Core sectors such as Iron, Steel, Aluminium, Coal, Power etc | Emerging sectors of the State such as Defence, Automotive, Agro Processing, ESDM and Biotechnology | Social Innovation for empowering citizens |
| Financial Technologies (Fin Tech) with focus on financial inclusion and Mobile Commerce (m-commerce) | Internet & Mobile Technology and Social Mobility Analytics & Cloud (SMAC) | Safe and Smart Cities, and Smart Villages |
| Healthcare Technology | Social Innovation for empowering citizens | Emerging sectors of the State such as Defence, Automotive, Agro Processing, ESDM and Biotechnology |
| Wearable Technologies | Healthcare Technology | Internet & Mobile Technology and Social Mobility Analytics & Cloud (SMAC) |
| Core sectors such as Iron, Steel, Aluminium, Coal, Power etc. | Renewable Energy | Financial Technologies (Fintech) with focus on financial inclusion and Mobile Commerce (m-commerce) |

Start-ups face significant challenges during COVID-19

However, most of the existing start-ups in Chhattisgarh face significant challenges, as they are more vulnerable than older incumbents to the shocks brought by COVID-19. They tend to engage in high-risk activities compared with other small and medium-sized firms (SMEs), face constraints in accessing traditional funding, and have a formative relationship at best with suppliers and customers.

At a time marked by significant economic uncertainty and with their revenues affected by containment measures and significant drop in demand, start-ups may become even more financially fragile and will need support for their short-term liquidity needs, critical for their survival (Report of OECD on Covid-19 and startups, 2020)

REVIEW OF LITERATURE

Low and McMillan, defines start-up as the "creation of new enterprises. Akansha Dutta suggests Start-up requires appropriate support and mentoring and enhancing the bank finance for the start-ups to encourage entrepreneurship and job availability. Tim Mazzarol et al. identify that, three key demographic variables (gender, previous government employment and recent redundancy) are the obstacles of small business establishment rather than trigger

The following Indian start-ups are currently the most followed– worthy. E-Commerce Start-ups: Flipkart, Snapdeal.com, Free Charge, Shopclues, Jabong.com, Bigbasket, Hungama, Book my show. Travel Start-ups: Yatra, Make my trip, Clear trip, Must see India, Ixigo. Transport: Ola, Taxi For Sure. Ad-tech: InMobi, AdNear, Adpushup, Vizur. Classifieds: Quiker, Cartrade. Search: Housing, Policy bazaar, India Homes, Iimjobs. Mobile: News hunt, Hike, Lookup. Fintech: Clear Tax. Social: Touchtalent.

Nowinski and Haddoud⁴ reported that in the field of entrepreneurship, a key attribute that needs to take root in every new venture is the intention to start a business. Thus, entrepreneurial intention concerns the individual's attitude towards starting a new business. The development of business, the expansion of existing ones and the creation of new corporations in the form of joint stock companies have led to the emergence of such a term as corporate social responsibility. One of the definitions of corporate social responsibility is known as a conceptual approach, or style of corporate management, and when we are following it the effectiveness and quality of management decisions is reflected not only in the economic effects, but also responsibility for the consequences of the decisions made to all parties involved in the process of activity (Johnstone-Louis, 2017)

J P Sharma, Reshma Gills and Tulsi Bhardwaj (2015) In this competitive era of growth, investors from all over the world are making more and more investments into Entrepreneurship for unleashing its existing potential as well as for exploring the untapped areas. But the specific and actual opportunities for different areas are not the same. Proper documentation and presentation of identified opportunities in different areas are lacking in our situation. In order to overcome these situations and develop a sustainable growth and economic independence among small and medium level farmers, extension and educational agencies need to help in developing human resources and capacities among them. Creation, documentation and replication of marketing innovation and marketing models by extension agencies may help in entrepreneurship development.

Research Gap: There were various studies done on the Startup ecosystem on the basis of industry wise such as tribal, agricultural based wise but there are no studies conducted on entrepreneurship development environment during pandemic. This study is an honest effort to fill the gap and contribute to society, academics, industrialists and stakeholders.

OBJECTIVES OF STUDY

- To understand the phenomenon of the startup ecosystem.
- To study and analyse the change in trend of the Startup Industry in Chhattisgarh.
- To Study the growth and development of startups during the period of COVID-19.
- To achieve insights into start up initiatives in Chhattisgarh.
- To study the future growth and opportunities in this Field.

RESEARCH DESIGN

This study was conducted on the basis of data collected from various periodicals, government reports, project reports and data published on government websites and magazines. During conduction of study investigators visited various incubation centers located in Raipur, Chhattisgarh and collected data by direct interview methods and continuous observation in the period of study.

Data collected during the Covid-19 outbreak happened and most industries got affected due to lockdown and migration of daily wages laborers.

Table1: District wise registered Micro, small, Medium, large, Mega and Ultra Enterprises in Chhattisgarh

| Sno. | District | Total Registration | Micro | Small | Medium | Large | Mega | Ultra |
|------|------------------------|--------------------|-------------|-------------|-----------|-----------|-----------|----------|
| 1 | Balod | 74 | 21 | 49 | 4 | 0 | 0 | 0 |
| 2 | Baloda Bazar | 251 | 55 | 193 | 1 | 0 | 0 | 2 |
| 3 | Balrampur | 36 | 6 | 30 | 0 | 0 | 0 | 0 |
| 4 | Bastar | 17 | 2 | 15 | 0 | 0 | 0 | 0 |
| 5 | Bemetara | 82 | 33 | 48 | 1 | 0 | 0 | 0 |
| 6 | Bijapur | 8 | 5 | 3 | 0 | 0 | 0 | 0 |
| 7 | Bilaspur | 172 | 81 | 82 | 5 | 4 | 0 | 0 |
| 8 | Dantewada | 6 | 5 | 1 | 0 | 0 | 0 | 0 |
| 9 | Dhamtari | 130 | 55 | 74 | 0 | 1 | 0 | 0 |
| 10 | Durg | 326 | 95 | 212 | 12 | 5 | 2 | 0 |
| 11 | Gariyaband | 56 | 22 | 34 | 0 | 0 | 0 | 0 |
| 12 | Gorella-Pendra-Marwahi | 11 | 3 | 8 | 0 | 0 | 0 | 0 |
| 13 | Janjgir - Champa | 220 | 112 | 108 | 0 | 0 | 0 | 0 |
| 14 | Jashpur | 64 | 35 | 28 | 0 | 0 | 1 | 0 |
| 15 | Kabeerdham | 61 | 19 | 41 | 1 | 0 | 0 | 0 |
| 16 | Kanker | 48 | 22 | 25 | 1 | 0 | 0 | 0 |
| 17 | Kondagaon | 13 | 7 | 6 | 0 | 0 | 0 | 0 |
| 18 | Korba | 103 | 57 | 45 | 0 | 0 | 0 | 1 |
| 19 | Koriya | 52 | 27 | 24 | 0 | 1 | 0 | 0 |
| 20 | Mahasamund | 200 | 94 | 99 | 3 | 4 | 0 | 0 |
| 21 | Mungeli | 59 | 21 | 37 | 1 | 0 | 0 | 0 |
| 22 | Narayanpur | 2 | 1 | 1 | 0 | 0 | 0 | 0 |
| 23 | Raigarh | 207 | 81 | 109 | 8 | 8 | 1 | 0 |
| 24 | Raipur | 593 | 135 | 393 | 44 | 14 | 6 | 1 |
| 25 | Rajnandgaon | 178 | 63 | 110 | 3 | 1 | 1 | 0 |
| 26 | Sarguja | 92 | 43 | 45 | 3 | 1 | 0 | 0 |
| 27 | Sukma | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 28 | Surajpur | 64 | 29 | 33 | 1 | 0 | 1 | 0 |
| | TOTAL | 3125 | 1129 | 1853 | 88 | 39 | 12 | 4 |

Source: Govt of Annual Progress Report (2020) of ministry of Micro, Small, Medium Enterprises

Analysis: To analysis the data table and percentage method used and graphically presentated in Pie chart. There are six parameter taken to assess robust ecosystem for startup of state, are mentioned below:

| S.No | Parameters | Planned | Implemented | Gap |
|------|---|---------|-------------|-----|
| 1 | Incubation centres and Accelerators | 100% | 60% | 40% |
| 2 | Access to the market | 100% | 65% | 35% |
| 3 | Funding and Support system - Government funding for development of Start-Up | 100% | 87% | 13% |
| 4 | Funding and Support system-Non Government funding for development of Start-Up | 100% | 45% | 55% |
| 5 | Institutional Development | 100% | 60% | 40% |

Growth Capture in different Parameters

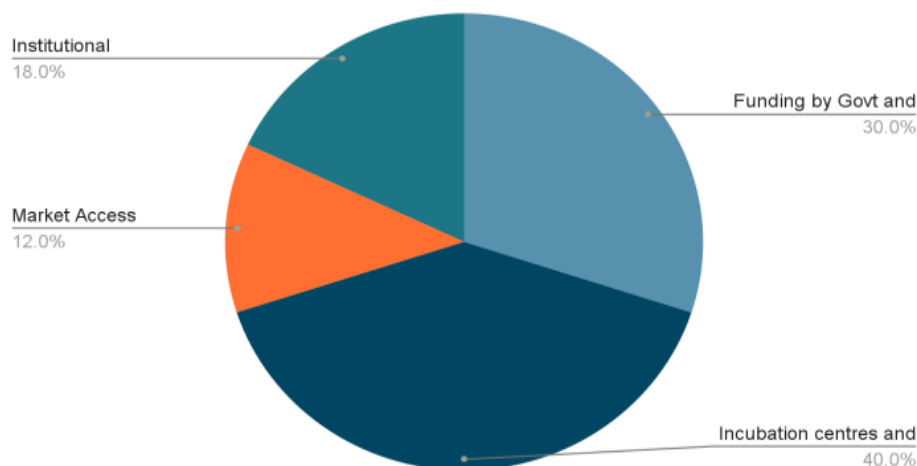


Figure 1 : Growth capture in different Parameters

Growth Rate during COVID-19 in different Parameters

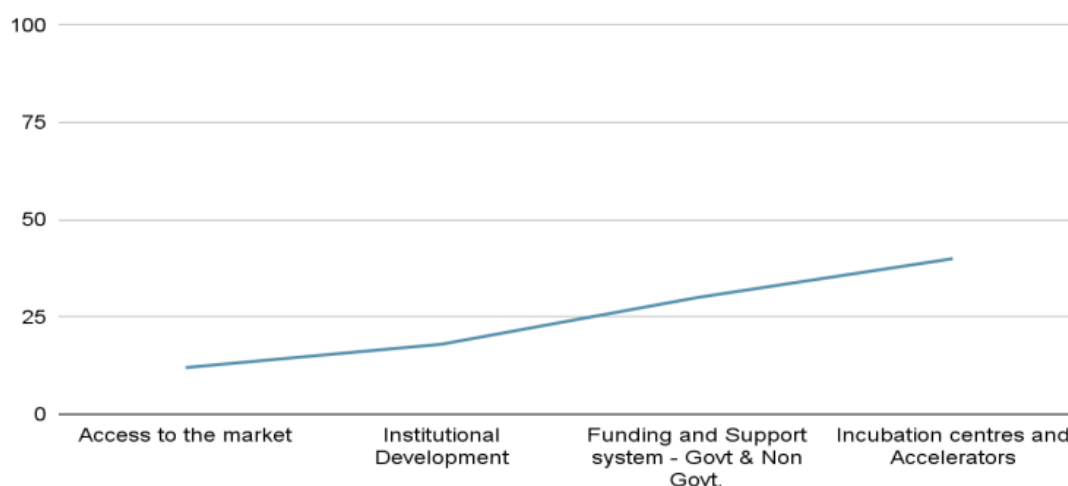


Figure 2: Growth rate during Covid-19 in different parameters

FINDINGS

1. Lack of awareness and importance of Startups among people.
2. In spite of the deficit of infrastructure and various barriers like funding, proper Infrastructure they tried to make a positive effect on the society.
3. Remarkable works are being performed by Entrepreneurs in this outbreak situation.
4. By facing the problem of regardless availability and reliability on Start ups but they significantly marked implement in Chhattisgarh
5. Govt. promotes university-business collaborations to facilitate industry applications of innovation and university-to-entrepreneurship transitions.
6. Govt promotes entrepreneurship training, also in combination with benefits for displaced workers and lifelong learning, to facilitate (un)employment-to-entrepreneurship transitions, with particular attention to disadvantaged groups.
7. Lack of Support short-term financial needs of existing start-ups (e.g. with loan guarantees, direct lending, grants or subsidies).

SUGGESTIONS

1. Government should focus on Small Scale Industries right now as they have performed unpredictable work for the support of people in crucial periods of pandemic.
2. Proper financial assistance must be ensured from the end of government for the growth and development.
3. Favorable marketing strategy should be formulated for the unorganized sector.
4. Government should appreciate the outstanding performance of members of Incubators who played a heroic role from the back screen for combat like warriors with corona.
5. The government should make concrete policies for Entrepreneurs to merge them with the mainstream of economic growth and development.
6. Favorable marketing strategy should be formulated for the Start up sector.

CONCLUSION

In many of the developing nations, small and medium firms play an important role as life blood for the livelihood security of population and economic welfare of the country, This study is tried to analyse the growth and development of Start ups in Chhattisgarh which impacted the over all growth and development of Country. In this pandemic outbreak we saw high de-growth rate and structural changes of the economy, In many of the cities in Chhattisgarh, Start Ups face a series of constraints that often limits their ability to participate competitively in production and marketing chains and services but Government promote and provide number of programmes, schemes and funding which made it bit easier for entrepreneurs. However, much more policy action needs to be taken for developing Startups and Entrepreneurs for long-term basis.

Implications: Findings of this study will provide insights for future startups and help them avoid growth barriers. This study will help government bodies to enhance funding and support system for coming startups.

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THE FUTURE TRENDS OF PROVINCIAL AND LOCAL GOVERNMENT UNDER THAI LAW

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ABSTRACT

This article aims to present trends in provincial and local government under Thai law in the future. The current situation has covered changes in various fields such as social, economic, political and administrative, public administration, technology, etc., which are characterized by rapid, intense, and more complexity. As a result, the development of the country must change the form and roles of administration in various fields to be in line with the changing conditions. This is therefore an important reason for the government to issue policies and laws that will be used as a model for driving the economy with innovation to develop Thailand towards stability, prosperity, and sustainability, or better known as Thailand 4.0 itself. Thus, The Future Trends of Provincial and Local Government under Thai Law should be based on principle as follows; (1). Bring the community plan to help allocate the local development budget and drive the implementation under the community plan to achieve concrete results. (2) Provide basic economic and social services to the community thoroughly and efficiently. (3) Coordinate cooperation among development partners at all levels, starting from the provincial community. Groups of provinces, regions, and countries in implementing projects and development activities that benefit the community in a wide range of dimensions. (4) Develop a systematic local database and keep it up-to-date. And (5) Develop a community monitoring and evaluation system and establish indicators of community strength in various dimensions.

Keywords: *The Future Trends, Provincial Government, Local Government*

INTRODUCTION

In the end, the democratic trend of the world has influenced to drive people's political participation to develop to create a network of participation of people's organizations from the national level down to the local level until it feels like those "Politics is a matter that people have to take responsibility for together. The use of political power affects the way of life of the people." (Thamrongthanyawong, S. 2007; Sadao, P. and Meemana, P. 2021: 39). However, the important starting point for the Thai people is to be more alert in their involvement in politics. In the end, the democratic trend of the world has influenced to drive people's political participation to develop to create a network of participation of people's organizations from the national level down to the local level until it feels like "Politics is the responsibility of the people together, the use of political power affects the way of life of all people" (Singmart, S. and Kenaphoom, S., 2015; Bunsam, C., and Meemana, P. 2021: 1).

Due to global changes and efforts to build a good local management system, Although there are still issues that need to be fixed and further developed, can indicate the trend of local management system in Thailand in the future due to the political and local government of Thailand as the foundation or basis for developing a government system and developing a democratic system, developing a national administration system. In this section, we would like to discuss the trends of provincial and local government under Thai law in the future. This will consist of political directions, regional and local governments in Thailand, good governance in the management of local government organizations, guidelines for the development of good governance for local governments in Thailand, good governance in the administration of administrative organizations. Local sections under the Thailand 4.0 Strategy, provincial and local government under Thai law in the future according to the direction of local government.

Political direction, provincial and local administration under Thai law

Local governance is a characteristic of the power relationship of the allocation of resources to the locality. This is generally the nature of local public services under the transfer of power from the central government to people's decision-making with the real goal of promoting people's self-government, which generally focuses on the principle of decentralization, the proportion of power of governance, and the independence of administration between the central government and the local government. Local government organizations to be appropriate. Especially in countries that are developing political regimes into democratic regimes, local governance is the basis (Training. Ground) that is important in cultivating an understanding of rights and freedoms and the boundaries of self-government. Especially in democratic governance, the strength of the people and the potential of local governance will show that sovereignty belongs to the people, by the people, and for the people (Tainchaiyapark, P. 2018).

From the foregoing, the direction of local government in Thailand must be in the direction of managing the country's economic and social resources for development, This highlights the importance of good governance in helping to restore the country's economy. The government can provide efficient services, has a fair system, has an independent legal process, has a transparent legislative and media bureaucracy, is responsible for the implementation of good governance, enabling the organization to optimize its management. It is also a mechanism for controlling, monitoring, and auditing with the participation of people or outside organizations. This is to prevent damage to the management of the organization because the creation of good governance in the organization is to create a good sense of management and work in the organization and to organize a system that supports it. A good conscience is practiced, whether it is in the matter of effective management, no waste, fraud monitoring, transparency. Taking into account those involved who will be affected because those affected by the operation of government agencies are directly related to the people (Siengpror, R. 2018)

Guidelines for the development of good governance for local government under Thai law

Guidelines for the development of good governance in the phase of the 12 th National Economic and Social Development Plan, 2017 - 2021 , by hiring the Thailand Development Research Institute Foundation as a project consultant for a period of 14 months starting from June 30, 2015, to August 31, 2016, the objective is to determine the guidelines for the development of good governance in the development of the country during the 12 th Development Plan phase, and now the study according to the said project has been completed. The framework for analyzing Thai government and private governance in 6 main issues (Samutthawanit, C. 2000) is **Rule of law**, the separation of powers, the protection of people's rights and freedoms, the role of government and law enforcement. **Morality**, rules, and codes of conduct. **Transparency**, disclosure of information, and transparency in answering questions. **Accountability**, concerning you and the punishment of workers. **Participation**, on listening to opinions and giving people the opportunity to participate in planning and decision-making. **Worthiness**, on Optimizing Productivity, Achievement, and Sustainability. Among the six main issues, problems/obstacles were found, development guidelines and mechanisms for driving, including recommendations, can be summarized as follows: (Office of the National

Economic and Social Development Board. 2016)

Table 1 Guidelines for developing good governance according to the National Economic and Social Development Plan

| Good Governance Problems | Development guidelines | Drive mechanism |
|---|---|---|
| Rule of law | | |
| Some laws are also outdated, redundant, contradictory, or cause more negative effects than positives. | Old, obsolete, and inappropriate laws (Regulatory Guillotine) | -Breaking the law must be carried out by a central authority, not a law enforcement agency. - The implementation of the system is divided into two phases, the first phase is the planning of operations and the second phase is the implementation of blueprints. |
| | การ Assess the impact of legislation before it is enforced (Regulatory Impact Assessment: RIA). | -Set objectives for implementing RIA in a concrete and inspiring way for government agencies to take action. - Determine appropriate RIA procedures such as defining the scope, duration, and content of the assessment, as well as hearing feedback. |
| | | - Establish a central agency to be responsible for promoting, monitoring and evaluating, or analyzing the impact of legislation. |
| | | New legislation and the establishment of a new agency to support special missions require monitoring and assessment of how much the mission has been accomplished and whether it should stay or cancel. |
| Morality | | |

| | | |
|--|---|--|
| <ul style="list-style-type: none"> - The qualification of government officials to take office is unclear. - The Code of Ethics has not been put into practice. - The current bureaucratic mechanisms are unable to incentivize stakeholders to examine the work of the state (whistleblowing) as it should. | <p>To develop a system of discipline and ethics for government officials to be appropriate in the areas where the law cannot be reached, to help create behavior and incentivize honesty, disclose the wrongdoing publicly if injustice is seen, and disclose the wrongdoing so that it will not be bullied by the perpetrator later.</p> | <ul style="list-style-type: none"> - Modify the Code of Ethics whereby all parties concerned may request that the Code of Conduct be revised, including a list that indicates the characteristics of bad ethics. - Should provide channels for citizens, the private sector, and government officials to request amendments to the Code of Ethics. - Each agency's ethics committee should have external experts who are not affiliated with the agency. - A bullying government official wins a case involving a public issue, |
| Good Governance Problems | Development guidelines | Drive mechanism |
| | | that official should be compensated to cover all costs incurred during the process. |
| Transparency | | |
| <ul style="list-style-type: none"> - The problem of concealment of government information due to the limitations of the Government Information Act, and the work of the Office of the Government Information Commission - Lack of media that question the functioning of the state due to media intervention | <p>Pushing for real information disclosure by improving the Government Information Act 1997 and improving the operations of the Office of the Government Information Commission.</p> | <ul style="list-style-type: none"> - Amendment of the "Official" Information Act to cover "public" information. - Improve the structure of the Office of the Government Information Commission to be an independent organization. - Data storage systems and standards should be improved to meet open government data standards to help prevent the loss of sensitive data and reduce browsing time. |
| | <p>Develop mechanisms for various sectors to question the government, both directly and indirectly, by improving the quality of media autonomy and the mechanisms of balance between civil society.</p> | <ul style="list-style-type: none"> - There should be state advertising laws to allow for less politically motivated purchases of state advertising. - News editors of media organizations should be separated from the business and administrative structures, and journalists' unions should be established to empower journalists. - Supporting anti-litigation laws to deprive public participation. |
| Accountability | | |
| <ul style="list-style-type: none"> - Government officials and government agencies respond more to the needs of the parent agency than the people. - The work of independent organizations responsible for improving the governance of other agencies is not as efficient and effective as it should be. | <p>Shorten the lines of responsibility of agencies with long lines of responsibility and strengthen independent organizations responsible for improving the governance of other agencies.</p> | <ul style="list-style-type: none"> - Central government should be more decentralized to local authorities or autonomy to departments that interact directly with the people. - The central government should reduce the documented evaluation of the work, it should reflect only the level of productivity, the satisfaction of the people, the results, and the impact, and bring information technology to the service faster. - NGOs working to improve the governance of other agencies should be encouraged by creating diversity in the nomination committees and NGOs committees and disclosing investigative details to the public |
| Good Governance Problems | Development guidelines | Drive mechanism |

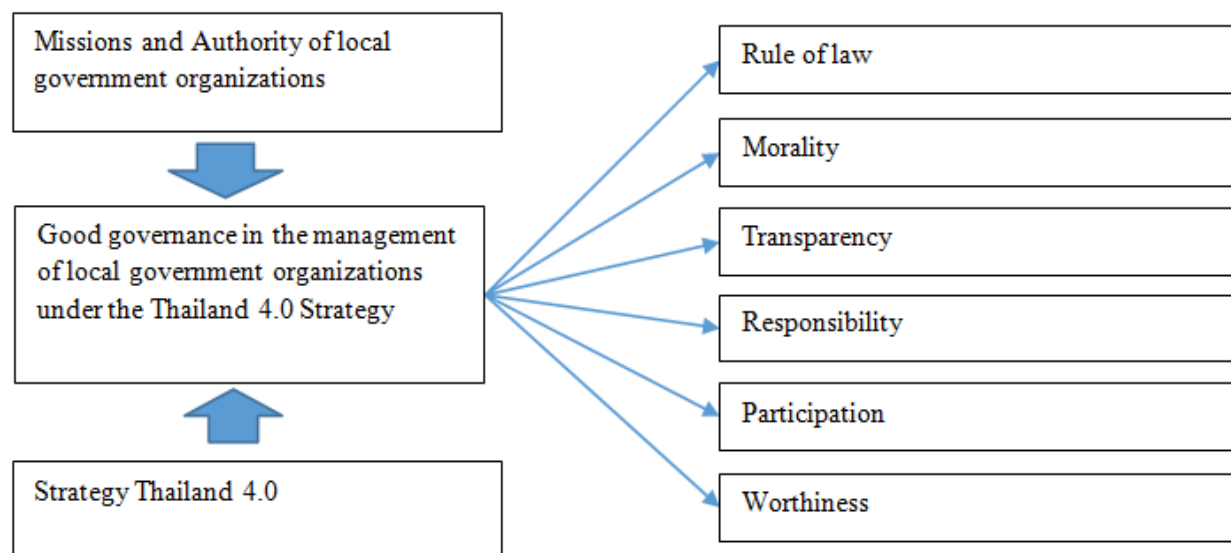
| | | |
|---|--|---|
| | | within the framework of the exact period. |
| Participation | | |
| -The public hearing process is often of poor quality and lacks real participation. -The public participation from the planning and policy-making stages is limited. | - Improve the process of participation in environmental and health impact assessments to be more qualitative and reflect real participation. | -Should have the power to determine the type of projects/activities that affect the environment and health on behalf of the Ministry of Natural Resources and Environment, and have the power to have the project owner agency come out to explain to the public and if the project owner agency The refusal to cooperate with the establishment of criminal offenses. - List of potential candidates for the public hearing should be published before formal appointments are made. - The public hearing participants should be categorized and given priority to the dissenters. |
| | - Provide opportunities for people to be proactive in the planning and decision-making process of the project. | - Adjust the roles and scope of powers and duties of local government organizations that do not conflict with central and provincial authorities in the provision of public services. -Improve legislation to introduce local provisions to reduce costs for citizens to participate in local administration. |
| Worthiness | | |
| - The process of evaluating the cost-effectiveness of policies and projects is inadequate. -State budgets are undervalued due to loopholes in budget laws and regulations. | Improve the implementation of various projects and policies to be consistent and support each other until there is a good long-term impact. | Measurable targets at the level of output, outcomes, and impacts are linked, provided that the budget requester can explain the criteria for the indicators. |
| | Strengthening mechanisms to control the cost-effectiveness and sustainability of the national budget. | Establish clear legislation on fiscal rules and methods for assessing the cost-effectiveness of projects. |

From the foregoing, the government sector has realized the importance of creating good governance in Thai society. The adoption of a governance-based management system in public administration as well as in academic circles has given importance to the concept of good governance widely.

Administration of local government organizations under the Thailand 4.0 strategy

Good governance in the management of local government organizations under the Thailand 4.0 Strategy is a characteristic of economic and social resource management (Tainchaiyapark, P.2018). The main goal is to develop the locality for the benefit of the people living in the locality. It has the nature of integrated work linking elements of local sectors, namely the public, private, and civil society sectors as well as to support each other constructively until forming a balanced relationship between the economy, society, and politics, which will result in the peaceful coexistence of local societies. As well as local government organizations will have the power to manage the locality that is strong, efficient, quality, transparent, fair, and accountable, which will result in the stable development of the locality and the nation. Sustainable and stable. However, good governance in the management of local government organizations under the Thailand 4.0 Strategy, can be seen in Figure 1, as follows;

Figure 1 shows the components of good governance in the management of local government organizations under the Thailand 4.0 Strategy.



Provincial and local government under Thai law in the future

Developing communities to be strong, self-reliant, stable, learning communities, keeping pace with changes, becoming happy and livable communities, and having connections between communities as a network for development across the country, each partner Development has the following roles:

Central Government (Central)

1. Manage society by linking plans at all levels from national development plans, state administration plans, government action plans, provincial group strategies, local plans, and community plans in a step-by-step manner including integrating activities under the national agenda in various fields such as drugs, poverty alleviation, healthy Thailand, solving epidemic problems, etc., by using the community as the main mechanism for operation.. Coordinate and facilitate the parties at the national level, provinces, local authorities, NGOs, scholars/community leaders to have a common role in carrying out various activities for the community including financial and academic support.

Improving regulations, laws, financial, fiscal, and non-budgetary funding, including reducing the import of agricultural chemicals, reducing taxes, or offsetting the costs of private businesses that create careers in the community. Community funding.

Decentralize the management of basic services to the locality and community, as well as strengthen the operational capacity of the local government in terms of finance, the four factors, the care of natural resources and the environment, the protection of the rights of the people and community, implementing economic and social infrastructure development over local capacity

Adjusting the way of thinking of government officials to have a perspective on solving problems and developing holistic communities to support community capacity, facilitate people to be able to take action on their own, as well as understand the approach Adhere to the philosophy of sufficiency economy and increase the role of the operation and encourage more community involvement.

Build a social warning system linked at the community, provincial, national, and international levels, especially to monitor the impact on communities along the border that are prone to transnational crime, due to the free movement of people. in both drug trafficking and money laundering.

Local Government (Local)

Bringing the community plan into budget allocation, local development, and pushing the implementation of the community plan into concrete results, by mobilizing resources within the responsible area from the public, private, and community to create Participation and ownership that leads to community-by-community development.

Provide basic economic and social services to the community thoroughly and efficiently. People in the community have equal access to scholarships, public health, and social protection.

Coordinate cooperation among development partners at all levels, ranging from provincial communities, provincial groups, and countries in implementing development projects and activities that benefit the community in many dimensions as well as supporting social measures to monitor and inspect services to be

transparent and fair, with measures to protect those who do benefits for the community/society.

Develop a systematic local database and keep it up-to-date, including household information, local potential information on various issues such as grouping, community activities, economic capital, natural resource capital, local wisdom capital, and philosopher, or a natural leader in the community. Support knowledge management in the community, coordinate local educational institutions, and open a platform for civil society to play a role in co-developing and being the core of knowledge management.

Develop a community monitoring and evaluation system and prepare indicators of community strength in various dimensions such as indicators of community happiness, both inner happiness such as access to religious principles, local pride, etc. And external happiness such as having a warm family, having enough four factors, having security in life, etc.

PRIVATE SECTOR

Support research and development to create a body of knowledge and upgrade local wisdom, conduct research with the community, be a partner of the community in extending wisdom, harmonize, and create a balance between the economic sector and the community.

Supporting the resources of speakers, building a career in the community, taking responsibility for the community around the establishment, having volunteer activities for society, including producing products that are not harmful to consumers, do not harm the environment, and livelihoods. The beauty of the community.

Supporting community enterprises, incubating community enterprises, creating new entrepreneurs, creating community products from a variety of resources and community potential, supporting both in the form of investments, marketing opportunities,

Knowledge by sharing benefits fairly.

Community (Public/Civil Society)

Gathering groups, sharing ideas, working together, developing community databases, formulating guidelines and activities for community development based on the principle of self-reliance by taking into account the potential of resources, wisdom, way of life, culture, and local environment. By bringing community information to analyze problems and causes, find solutions, put them into practice based on the knowledge and potential of the community, study visits, exchange knowledge from the network, and create a participatory community plan.

Initiate and be a leader in organizing community-building activities, especially activities that link roles between houses, religious institutions, schools, and local government organizations. Build a network of care and protection for social welfare within the community, including helping the underprivileged of all types, and preserving natural resources and the environment.

Provide social measures in the community to monitor services, build good governance in the community, and provide measures to protect those who benefit the community/society.

Thailand has a clear and concrete main development plan for the country, namely the 20-Year Strategic Framework (2017-2036), with six key strategic framework plans as follows; 1. Security, 2. Building competitiveness, 3. Development and empowerment of people, 4. Creating equal opportunities and social equality, 5. Building growth on the quality of life that is environmentally friendly, 6. Balancing and developing the public administration system. Therefore, the six-sided framework is the main plan of national development and sustainable development goals, including the restructuring of Thailand to Thailand 4.0, as well as national reform issues with the 12th National Economic and Social Development Plan (B.E. 2017-2021) is an important turning point in connection with the 20-year national strategy.

CONCLUSION

The trend of provincial and local government under Thai law in the future is an important basis for governing the country, which comes from the principle of democratic governance, is characterized by being a lower-level government where the executives are directly elected by the people, having Close to the people. Therefore, local government organizations are important to the development of the country in all aspects, both economically, politically, socially, and culturally. If there is a clear governance guideline, it will enable local governments to be able to govern themselves with flexibility in management, thus enabling the country to progress quickly.

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THE ICARUS PARADOX IN THE INDIAN BANKING SECTOR: THE STORY OF YES BANK

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ABSTRACT

Yes Bank started its journey in 1999 and the bank had its IPO in 2011. The ever ambitious Rana Kapoor, always said Yes, synonymous with the bank's name, to risky loans and successfully recovered them. The bank continuously offered loans to business houses that were experiencing huge financial difficulties. Icarus paradox is a term coined by Danny Miller in 1990 in his book, by the same name. This is from Greek mythology where Icarus had wings made of wax, which helped him to escape from danger. When he got so ambitious and went near the sun, the very wings which protected him, melted and ultimately led to his demise. This myth is used to denote the business failure of organisations with phenomenal success in a short period and then crash suddenly, due to complacency or other blunders. The same thing had occurred with Yes bank where it drew phenomenal success on lending to risky companies and continued underestimating the forthcoming risks and soared very high. In 2017, the bank reported gross amount of bad loans. The bank became vulnerable as a result of prolonged poor credit cycle. The bank was not ready to accept its mistake and continued under reporting of its stressed loans. Yes Bank reported its maiden loss in March 2019 quarter after a huge damage had been done to multiple stakeholders and the Indian stock market as such.

Keywords : Yes Bank, bad loans, Non-performing Assets (NPAs), crisis, Governance

INTRODUCTION

Yes Bank is a high-quality, customer-focused, and service-oriented financial institution. It has transformed into a 'Full Service Commercial Bank,' offering a comprehensive range of products, services, and technology-driven digital offerings to corporate, MSME, and retail customers since its inception in 2004. The Investment banking, Merchant banking, and Brokerage activities are handled by Yes Securities, and its Mutual Fund business is handled by Yes Asset Management (India) Limited, both of which are wholly owned subsidiaries of the Bank. Yes Bank has been acknowledged by prestigious media houses and global advisory firms as one of the Top and Fastest Growing Banks in various Indian Banking League Tables, and has won numerous national and international awards for our various businesses, including Corporate Investment Banking, Treasury, Transaction Banking, and Sustainable practises through Responsible Banking. The bank made a phenomenal growth and then had a unimaginable downfall, which would be discussed in this paper.

REVIEW OF LITERATURE

Understanding market performance and its impact on financial stability is the macro perspective in the literature, while understanding the efficiency of individual business units is the micro perspective. The aim of this study is to measure the efficiency of Indian commercial banks at the micro level by adding nonperforming assets (NPAs) and assessing their effect on bank income.

According to Rathore and et al. (2016), there is a positive relationship between overall advances, net income, and bank NPAs as a result of bank mismanagement, which is not healthy. They discovered that the positive relationship between NPA and income is due to poor client selection. Owing to a shortage of capital, banks are unable to provide loans to new clients, which has a negative impact on their liquidity. They advised banks to conduct proper pre-sanction evaluations and enforce forced disbursement controls in order to minimize nonperforming assets (NPAs).

The efficiency levels of public sector banks and private banks have been reversing in recent years, with private banks being more competitive than public sector banks such as the State Bank of India (SBI, including its associate banks). Tzeremes used the directional distance function to examine the efficiency of the Indian banking industry from 2004 to 2012. He discovered that the financial crisis has had no impact on the efficiency of Indian banks. Private banks, on the other hand, outperformed public and international banks.

The Indian banking system has been troubled by an increase in nonperforming assets (NPAs) in recent years, resulting in a vicious cycle that threatens its long-term viability. Though private and foreign banks have been blamed for the majority of frauds, Chakrabarty (2013) stated in his speech that public sector banks have contributed the most to the total amount involved.

The stress of asset quality and marginal capitalization faced by public sector banks, as well as various recommendations to resolve these issues, were among the key findings in RBI . Rajan (2014) emphasized the

importance of good governance and more autonomy for public sector banks in order to boost their competitiveness and make it easier for them to raise capital from markets. In response to the widespread belief that tightening regulations would stifle business opportunities, regulations do not appear to be a barrier to banks' continued operation following the crisis.

Early tracking and control of lent funds, according to Barge (2012), is a requirement of the hour. To ensure that the asset does not become a non-performing asset, the study proposes a number of steps, including tighter monitoring of end-use funds, knowledge about the borrower's credit history, and assisting borrowers in developing entrepreneurial skills.

Sengupta and Vardhan (2017) compared two post-liberalisation banking crisis episodes, one in the late 1990s and the other after the 2008 global financial crisis, both of which raised the problem of nonperforming assets (NPAs). Good governance, constructive banking regulations, and a strong legal structure for NPA resolution, according to the authors, will help solve the problem of NPAs. Regulatory leniency, on the other hand, would have a negative impact on the financial crisis.

Bhawna Mittal (2019) described the impact of rising NPA in India, claiming that NPA has risen over the last decade. It means that a substantial portion of the bank's assets have ceased to produce revenue, lowering the bank's profitability and capacity to generate additional credits. Bank profitability declines are triggering negative economic shocks and placing consumers' deposits at risk.

Reasons behind the YES Bank Crisis

Failure in Asset Growth: The YES bank's loan on 31st March 2014 was Rs. 55,633 crores and its deposits were Rs. 74,192 crores. Since then, the loan has risen to nearly four times as much, at Rs.2.25 trillion as of 30th September 2019. The bank's deposit, on the other hand, has not grown at the same rate, having risen by less than three times to Rs.2.10 trillion. The asset quality of YES Bank also gets worsened and it came under RBI's scrutiny.

Non-Performing Assets (NPAs): In 2017 and 2018, the RBI conducted an asset quality analysis of YES Bank, which resulted in a rise in the bank's impaired loans ratio and the discovery of major governance lapses, resulting in a total change in management. After that the bank struggled to cope with its capitalization issues. The YES bank also suffered from doubling in its gross NPAs between the months of April and September 2019 to Rs. 17,134 crores.

Consequences of the NBFCs Crisis: The Non-Banking Financial Companies (NBFC) crisis started with the unraveling of the crisis faced by the Infrastructure Leasing & Financial Services (IL&FS) and then extended to Dewan Housing Finance Limited (DHFL). As of September 2019, YES bank's total exposure to IL&FS and DHFL was 11.5%. In April 2019, the bank had approximately 4.1% of its total loans as potential non-performing loans over the next 12 months.

Governance Issues: The YES bank had to face several governance-related issues that led to its decline. Uttam Prakash Agarwal, one of the independent directors, resigned in January 2020, citing the lender's deteriorating corporate governance standards and enforcement failure. The bank under-reported NPAs of Rs. 3277 crores in 2018-19, leading the RBI to appoint R Gandhi, a former deputy governor, to the bank's board of directors. In January 2019, Rana Kapoor, one of the YES bank's founders, was asked to step down as chief executive. Governance issues had become a regular phenomenon in the Indian banking sector with a less vigilant regulator.

(Gayathri & Mangaiyakarasi, 2018)

Excessive Withdrawals: The YES bank's financial condition discouraged many depositors from keeping funds in the bank over the long term. As a result, the bank experienced a steady withdrawal of deposits, putting a strain on its balance sheet and worsening its problems.

Banking Sector Challenges

The YES Bank crisis arose as a result of the Indian economy's problems, which resulted in an increase in bad loans. The YES Bank crisis reflects badly at the RBI functioning. It revealed that the apex bank took too long to notice governance issues at IL&FS, DHFL, and YES Bank. The RBI's takeover of YES Bank did nothing to restore depositor trust in the bank. The apex bank's use of a moratorium to resolve the crisis just made depositors more suspicious. Choosing SBI as the investor to address this crisis shows the shortage of alternatives the government had in this situation. This is because, as a result of the recent bank merger, the majority of PSBs are in a time of transformation. As a result, India's largest bank, SBI, has been tasked with bailing out YES Bank. Aside from these, the crisis highlights the banking sector's problems.

Consequences of YES Bank crisis

Depositors may shift their money to public-sector banks, which are currently more reluctant to lend. Select private banks' deposit growth may slow as a result of the crisis, resulting in lower credit growth. Private sector banks would be forced to give higher deposit rates, raising the credit rate in the process. Both private and public banks will be unable to meet India's credit needs, which are critical to the country's goal of becoming a \$5 trillion economy by 2024-25. The YES Bank crisis could cause chaos on India's economy, which is already slowing.

RBI response to this crisis

The RBI, after taking over the YES Bank's management, had imposed a moratorium. It had also announced the draft "Scheme of Reconstruction", which involves the following: All YES Bank deposits will be treated the same as before, with the same terms and conditions, and will be unaffected by the scheme. The YES Bank's authorized capital will be increased to Rs. 5,000 crores (from Rs.600 crore). The paid-up capital will be increased to Rs. 4,800 crores, comprising of 24 billion shares of Rs. 2 face value. Currently, there are 2.55 billion fully paid-up shares issued, totaling Rs. 510 crores. The SBI has agreed to buy a 49 percent stake, or 11.76 billion shares, in the government's enlarged stock. The plan calls for the board of YES Bank to be reconstituted, with a new CEO and managing director. For at least a year, all workers of the reconstituted bank would be paid the same salary. The bank will be able to open new branches or shut down old ones, and the offices and branches will continue to operate as before. The bank's instruments that qualify for Additional Tier 1 (AT1) capital under the Basel III system will be permanently written down under the scheme. The bank's AT1 bonds are worth Rs. 8,800 crores. Separately, the RBI also decided to extend a loan of Rs.10,000 crores to the YES Bank as the lender of last resort (LOLR) against the government's. This 90-day loan will be offered at a bank rate of 5.4% plus 3% to meet the immediate liquidity needs of the bank.

Table 1: COMPARATIVE ANALYSIS OF FINANCIAL STATEMENTS

| Financial Year | Interest Earned (₹) | Interest Expended (₹) | Net Profit / (Loss) (₹) |
|----------------|---------------------|-----------------------|-------------------------|
| 2005-06 | 1,90,18,00,000 | 1,04,71,52,000 | 55,32,45,000 |
| 2006-07 | 5,87,60,94,000 | 41,62,566,000 | 94,36,51,000 |
| 2007-08 | 13,10,82,57,000 | 9,74,10,86,000 | 2,00,02,43,000 |
| 2008-09 | 20,03,31,84,000 | 14,92,13,56,000 | 3,03,84,20,000 |
| 2009-10 | 23,69,70,97,000 | 15,81,75,70,000 | 4,77,73,93,000 |
| 2010-11 | 40,41,74,73,000 | 27,94,81,74,000 | 7,27,13,78,000 |
| 2011-12 | 63,07,35,81,000 | 46,91,72,12,000 | 9,76,99,84,000 |
| 2012-13 | 82,93,99,91,000 | 60,75,20,92,000 | 13,00,68,07,000 |
| 2013-14 | 99,81,35,21,000 | 72,65,09,18,000 | 16,17,78,02,000 |
| 2014-15 | 1,15,72,00,65,000 | 80,84,16,93,000 | 20,05,36,14,000 |
| 2015-16 | 1,35,33,44,19,000 | 89,66,71,93,000 | 25,39,44,66,000 |
| 2016-17 | 1,64,24,64,37,000 | 1,06,27,33,67,000 | 33,30,09,64,000 |
| 2017-18 | 2,02,67,42,16,000 | 1,25,30,36,24,000 | 42,24,56,37,000 |
| 2018-19 | 2,96,24,74,73,000 | 1,98,15,71,60,000 | 17,20,27,88,000 |
| 2019-20 | 2,60,66,60,39,000 | 1,92,61,37,25,000 | (1,64,18,03,10,000) |

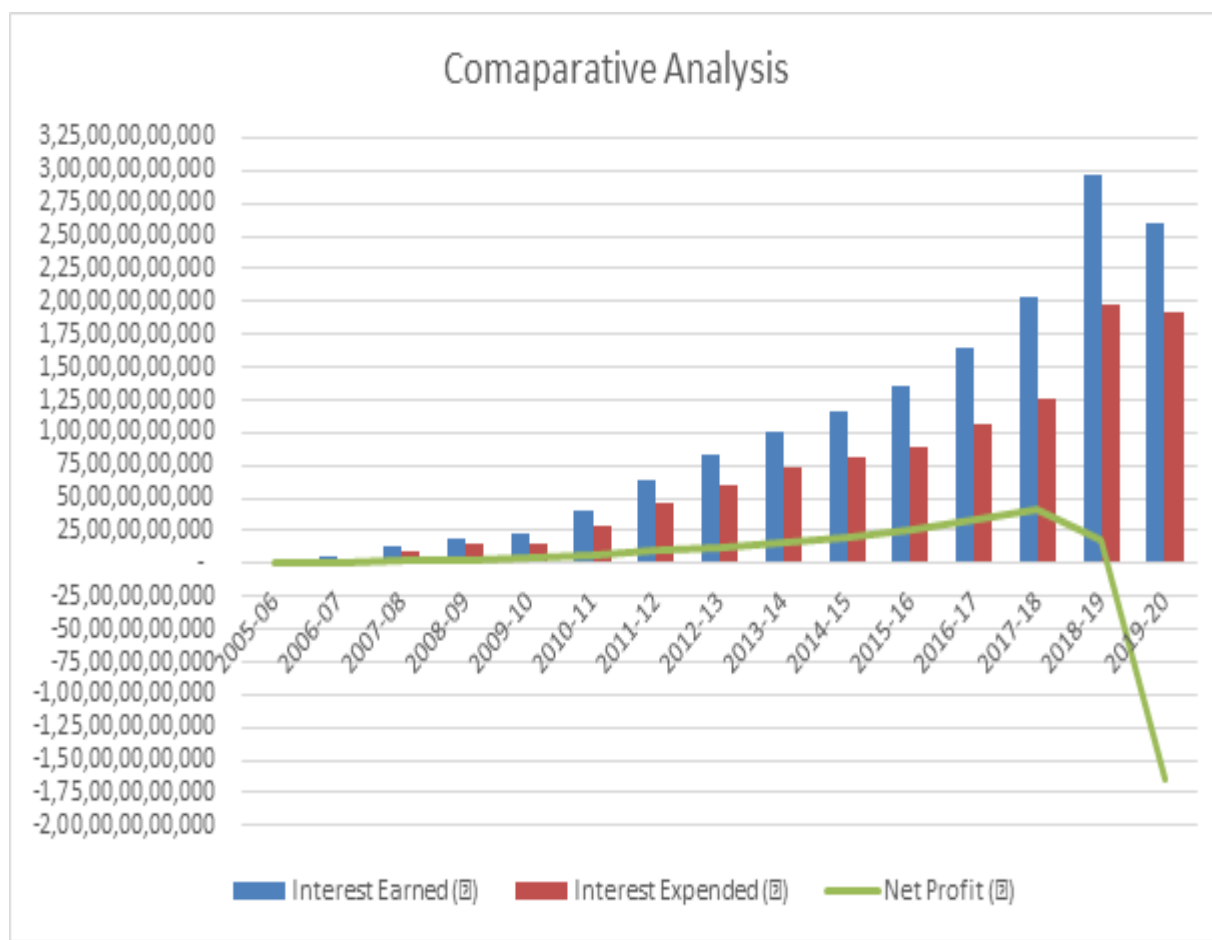


Figure 1: Comparative Analysis of Financial Statements
Source : Compilation by Authors

The bank reported constant growth in the business & profits from the year of its establishment (2004) until 2018. Thereafter because of the change in the management as a result of the RBI ruling the bank reported a steep decline in the Net Profits because there was suppression by the management while reporting the Provisions.

Table 2: COMPARATIVE ANALYSIS OF NPA PROVISIONS

| Financial Year | NPA Provisions (₹) |
|----------------|--------------------|
| 2005-06 | - |
| 2006-07 | - |
| 2007-08 | 2,43,71,000 |
| 2008-09 | 57,06,68,000 |
| 2009-10 | 87,60,39,000 |
| 2010-11 | 39,26,28,000 |
| 2011-12 | 11,56,77,000 |
| 2012-13 | 1,51,66,88,000 |
| 2013-14 | 1,35,81,69,000 |
| 2014-15 | 1,30,00,99,000 |
| 2015-16 | 4,97,90,20,000 |
| 2016-17 | 6,63,44,14,000 |
| 2017-18 | 10,78,82,87,000 |
| 2018-19 | 25,66,95,35,000 |
| 2019-20 | 2,78,06,03,57,000 |

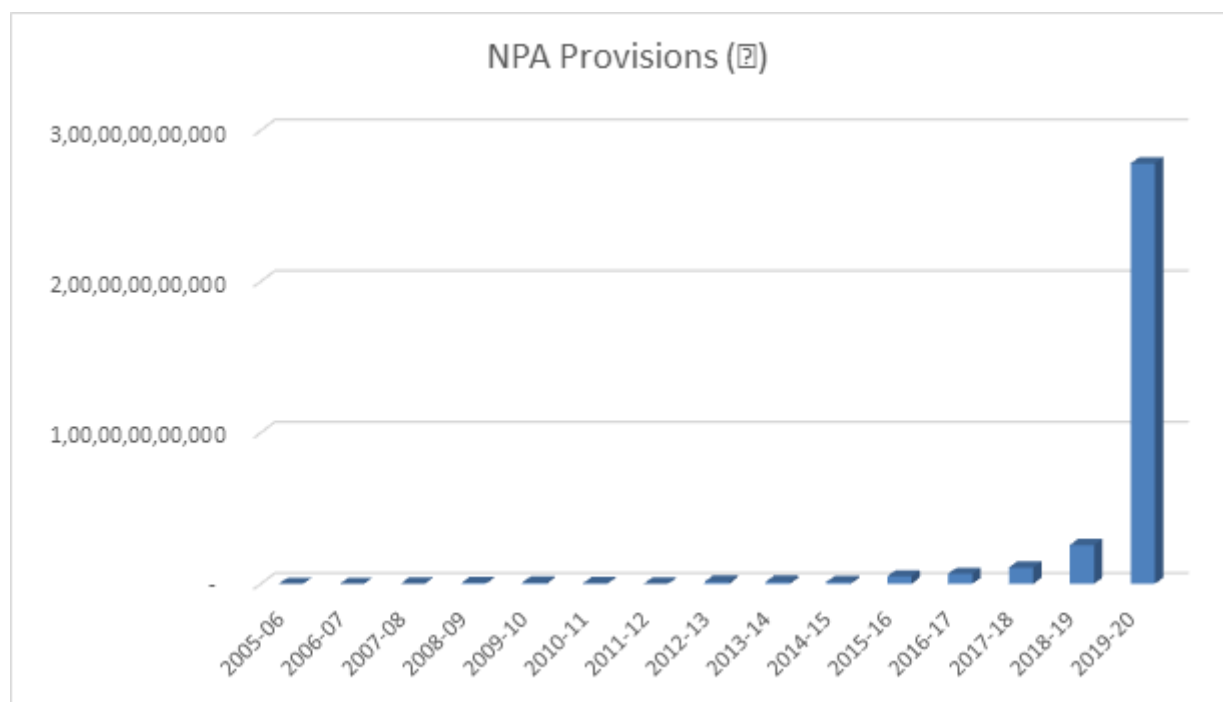


Figure 2: Comparative Analysis of NPA provisions

Source: Compilation by Authors

The NPA's increased significantly in the past 2 years because of under reporting in the Financial Statements by the management.

5W2H Analysis of the Yes Bank Crisis

What happened?

There had been concerns about the management under promoter Rana Kapoor after the death of one of its co-founders in 2008. The bank often provided loans to businesses that were unable to obtain credit elsewhere, a strategy that allowed it to expand its operations while also introducing significant risk.

These chickens arrived home to roost as the economy started to crumble. YES Bank has lent money to businesses like Cafe Coffee Day, CG Power, Jet Airways, DHFL, Indiabulls Housing Finance, and IL&FS over the years, all of which have gone bankrupt and caused a lot of stress in India's financial sector. The Reserve Bank of India had previously chastised the bank for underreporting its non-performing assets (NPAs), which stood at 7.4% in September 2019.

When did it start happening?

On March 31, 2014, the bank had a loan book of Rs 55,633 crore and deposits of Rs 74,192 crore. Since then, the loan book has nearly quadrupled in size, reaching Rs 2.25 trillion on September 30, 2019. According to the CBI's first information report, the scam began in April and June 2018 when YES Bank invested Rs 3,700 crore in DHFL's debt-ridden short-term debentures.

Who Suffered the most?

Customers were most affected when they were under RBI obligations and were unable to withdraw their own money from the bank. Investors who invested in the bank were and continue to be the most affected.

Where did it happen?

In several parts of the country.

How many parts involved?

Non-performing assets, Overflow of Liquidity.

How much is the loss?

Around Rs. 16,418 crores according to YES bank balance sheet 2019-2020.

Why is it a problem?

The internal banking system is not well-organized and susceptible to fraud. YES Bank is now liable for the amount of the fraud. YES Bank also supplied online transaction infrastructure, which was severely harmed.

Repercussion of the crisis on Stock Market

The crisis in yes bank had a huge impact on the Indian Stock market where the stock prices of many companies plummeted and some of them are covered here.

Max Financial Services Ltd.

Due to its exposure to crisis-hit YES Bank Ltd., shares of Max Financial Services Ltd. have dropped the most since July 5, 2016, dropping as much as 19.32 percent to Rs. 488.25 per share. In a conference call, the firm said it has a Rs. 2,000 crore Tier-II bond exposure to YES Bank, with a Rs. 1,000 crore shareholder exposure and the rest held by policyholders. However, the company claims that because these bonds will be held until maturity, no markdown in the profit and loss account is required. Only when there is a default on interest payments or when the rating is downgraded to 'D' will there be a mark-to-market loss, according to the report. The company stated that if necessary, it would contact the Reserve Bank of India and act in the best interests of all parties involved. Tier-II bonds have never been touched in the banking system's history, it claims.

Indiabulls Housing Finance

YES Bank owes Indiabulls Housing Finance Rs 662 crore in bonds, according to the company, which has no term loans outstanding with the lender. In a regulatory filing, YES Bank stated that it owes Indiabulls Housing Finance Rs 662 crore in additional tier 1 (AT-1) bonds. YES Bank made its AT-1 bond investments in 2017, as part of its treasury management of over Rs 20,000 crore in cash and when the bank was valued at over USD 10 billion, according to the statement. YES Bank has no term loans outstanding with Indiabulls Housing Finance, according to the company.

YES Bank has been put under a moratorium until April 3, during which period customers will not be able to withdraw more than Rs 50,000, and the board has been replaced by the Reserve Bank.

Dewan Housing Finance Limited (DHFL)

The CBI registered a case against the former MD and CEO of YES Bank, Dewan Housing Finance Limited (DHFL), as well as its promoter Kapil Wadhawan, on Sunday, just hours after the Enforcement Director arrested YES Bank's founder Rana Kapoor. In its FIR, the agency also called Doit Urban Ventures (India) Limited, which covers charges under the Prevention and Corruption Act and other Indian Penal Code sections.

The CBI has launched an investigation into DHFL's short-term debentures, in which YES Bank invested Rs 3,700 crore between April and June 2018. The inquiry is part of a larger probe into whether YES Bank purchased DHFL debentures in exchange for which the company was awarded loans worth Rs 600 crore against a collateral security of around Rs 40 crore.

The loan amount later became non-performing assets, and it is claimed that DHFL's Wadhawan paid the Kapoor's Rs. 600 crore in kickbacks in the form of a loan of a similar amount to Doit Urban Ventures, a company owned by his daughters Rakhee Kapoor Tandon, Roshni Kapoor, and Radha Kapoor.

YES Bank allegedly did not take action to recover the NPA-turned loans from DHFL, according to the allegations. The ED arrested Rana Kapoor on Sunday morning after over 30 hours of questioning in connection with a money laundering case involving DHFL. A Mumbai court later sentenced him to three days in ED custody.

Snapshot of the rise, fall and revival

Genesis : Rana Kapoor & Ashok Kapur founded Yes Bank in 2004

Yes Bank's journey began in 1999 when Rana Kapoor partnered with his brother-in-law Ashok Kapur and Harkirat Singh with Dutch Rabobank to set up Rabo India Finance. With support from Rabobank, the trio received in-principle approval to set up a bank in 2002, and after Harkirat's exit the next year, Rana and Ashok founded Yes Bank in 2004.

Rise: The bank grew in popularity by granting risky loans

The lender grew in popularity as it never said no to risky loans. Rana, a veteran banker, used his rich network to lend and recover loans. In 2005, Yes Bank entered the stock market with a Rs. 300 crore IPO. In 2011, the bank received the award for "India's Fastest Growing Bank of the Year" at the Bloomberg UTV Financial Leadership Awards 2011.

Fall: The bank lost popularity in recent years

In 2017, the bank reported a divergence in gross bad loans of Rs 6,355 crore. In June 2018, Yes Bank shareholders approved Rana Kapoor's reappointment as the lender's Managing Director (MD) and CEO for three

years starting September 1. However, in September, the RBI cut his tenure till January 31, 2019. The bank's shares tanked by over 30% the day the announcement was made.

Continued Downfall: As the bank's governance crisis continued, its rating fell

As Yes Bank struggled to find a new CEO, the lender missed second-quarter profit estimates. Meanwhile, provisions for bad loans and mark-to-market losses doubled and the bank's asset quality deteriorated. A string of resignations followed including Chairperson Ashok Chawla, independent directors Vasant Gujarathi and Rentala Chandrashekhar, etc. Subsequently, rating agency Moody's downrated the lender.

Bad loans marred Yes Bank's Balance Sheet

Yes Bank's balance sheet was also marred by bad loans, including Infrastructure Leasing and Financial Services (IL&FS), Anil Ambani Group, GC Power, Cox & Kings, Altico, CCD, Essel Group, Essar Power, Vardaraj Cement, Radius Developers, and Mantri Group.

Revival: Bank proposed \$ 2 billion stake sale

In November 2019, RBI detected divergence in Gross NPA's reported by Yes Bank. The same month, the bank's board approved plan to raise \$ 2 billion, with Canadian billionaire Erwin Singh Braich buying \$ 1.2 billion worth of shares. Braich's investment was rejected by the bank & it proposed another \$ 1.4 billion share sale. The bank's shares & Moody's rating continued to fall.

DISCUSSIONS

There were numerous Governance failures in India followed by hue and cry from the investors, public and regulatory agencies. But it would be conveniently forgotten in few months by other persistent problems. The lessons are seldom learnt on the Governance front. There must be a clear separation of ownership and control. In the case of YES bank, it had been very blurred as Rana Kapoor who entertained his own ambitions, putting the interest of all other stakeholders in danger. Banking sector is built on huge trust. A constant vigil must be exerted by all stakeholders including board of Directors, auditors and regulators. Extreme reliability on an individual's supremacy and stardom shall be questioned.

In spite of having strong directors, the yes bank had miserably failed in governance because of the lack of prudence and vigilance on the part of Directors and Auditors. By the time RBI came into the picture, the ultimate damage has been done and RBI has to come up with rigorous standards for auditing. The SBI and other private sector banks had bailed out Yes bank, but this is also an indirect use of public resources to bail out a failed private bank, due to the mistake of Rana Kapoor. These bail outs take a toll on the tax payer, the recent bail out of Punjab National bank and then Yes bank. The bail out was inevitable to preserve the integrity of the financial system and economy. Numerous red flags had been missed out in case of Yes bank by all stakeholders, including investors and it had resulted in a very costly mistake. Such bail outs should result in strong Governance reforms and increased monitoring by the regulators and all we could do is only hope.

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DISASTER MANAGEMENT IN HIGHER EDUCATION LIBRARIES: A REVIEW OF LITERATURE

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ABSTRACT

Role of disaster management plans in libraries is very vital. Even though most of the library staff are not very well aware of disaster preparedness of libraries. The studies conducted in various countries and different libraries around the world found that there are problems with disaster preparedness awareness in most of the higher education libraries.

Keywords- Disaster Management, Higher Education Libraries, Review Literature

INTRODUCTION

Disasters can be defined as the sudden calamity which could disrupt the functioning of community or society and causes damage to human and materials. These disasters can be less severe or sometimes more serious. In many cases they can be fatal too. On the basis of origin, these disasters can be classified into two major categories, namely; Natural disasters and disasters of man-made origin. Libraries are a crucial center of knowledge. They play a vital role in the collection of information on all the aspects of life. In the past various libraries are famous for their excellent collections. Libraries have an important role in the life of people.

Apart from hitting the general life of people around countries, disasters also severely hit profit and non-profit organizations. Out of which one is the knowledge source i.e., Libraries. Many kinds of disasters affect libraries and research in library science literature yields a lot of such cases in history. This review details out the meaning of disasters, various types of disasters, effect of disasters on libraries. Also entails out the measures taken out by the libraries around the world in handling the disasters.

Disaster Management as a subject essentially deals with management of resources and information as far as a disastrous event is concerned and also how effectively and seamlessly one coordinates these resources. The Government of India has brought about a paradigm shift in the approach to disaster management. The new approach says that development cannot be sustainable unless disaster mitigation is built as the integral part of development process. Another important approach is that mitigation has to be multi-disciplinary, means across all sectors of development. Disaster management occupies an important place in this country's policy framework. Poor and the under-privileged who are worst affected on account of calamities/disasters. Man who entered this science has been exploring during his exercise to unravel the various mysteries till date. Disasters are not totally discrete events. Their possibility of occurrence, time, place and Severity of the strike can reasonably and in omen cases accurately predicted by technological and scientific advances. It has been found that there is a definite pattern in the occurrences of disasters and therefore we can do something to some extent to reduce the impact of damage.

REVIEW OF LITERATURE

Review of literature is the collection of work done on any topic or subject so far. Review provides an outline of the work done since a particular time period on any particular topic. It is an evaluation of publications done so far on any theme. It gives us insight in how much work has been done by previous scholars or scientists in some field. It validates the previous data. It is very important to have a review of the previous work done so far to start research in any field or on any topic. Without review research could not go in right direction, as it is crucial to have an information about what have been already found out in any research subject, theme or topic. Review of literature helps us to save our time from getting wasted in doing work which has already been done. Also, it helps the research society to grow in new dimensions. With the lack of review research field cannot grow. Without the review the researches would become redundant.

All the relevant literature published on Disaster management

Sharma. Nilakshi, Deka. Banasri and Das. Jitu (2018): Different kind of disaster affect the libraries in several ways, every type of disaster has a different effect on the libraries. Libraries needs to be well prepared for any kind of disasters, be it natural disaster, man-made disaster, accidental failures, criminal damages or any other. This study has been undertaken to investigate the disaster preparedness in the university libraries. The present study is done using a survey, using a questionnaire method, a well-designed questionnaire was prepared for the study. Also, Telephonic interaction and personal observation were made for the present study. The result

of the study clearly indicated that majority of the university libraries taken under study, have disaster preparedness such as written disaster plans, emergency exits, fire alarms, emergency power supply. Apart from this basic planning like prohibiting activities such as smoking, data backup, earthquake proof building etc. were also found in the libraries. But some of the libraries under the study also indicated that they are less prepared to handle a situation coming out of the disasters. The study will help the library professionals to gain knowledge about different disaster preparedness used in university libraries of Assam.

Barua, Niraj. (2018) Libraries are not immune to disasters and thus they need to be well prepared for any such eventualities especially in a disaster-prone area. Therefore, the present study was undertaken to investigate the level of the disaster preparedness of the college libraries. This study has found that majority of the college libraries lacked disaster preparedness such as emergency exits, written disaster plans, fire alarms, emergency power supply, prohibiting activities such as smoking, data backup and insurance.

Chakraborty, Pramanik, Abhijit. (2017) Library and Information Centre is a storehouse of culture. Modern Library and Information centres are not safe today because of forthcoming hazards created either by human or by nature at any time at any place. Past has witnessed the attack of libraries either by human or by nature and recorded the damage and abolishment. Also in recent times it is observed that Library and Information centres are facing hazards either by nature or by human being. So, it could be said that now it is the high time for the library and information centre professionals to come forward to save the Library and Information centre by putting whatever measures they can. To preserve and save libraries from forthcoming hazards, the authorities should apply suitable methods and techniques of disaster management. The present study defines the term disaster, types of disaster, and disaster management and their related terms in the light of Library and Information Science. It includes objectives and discussion which are related to the application of disaster management in Library and Information Centre. To avert and alleviate the outcome of any type of disasters, the researchers present a framework for Methods and Techniques of Disaster Management for Library and Information Centres keeping in the mind of the need of Library and Information Centres. In the last, concluding few recommendations are enumerated to reduce the vulnerability of disaster as far as possible.

Panle, Patrick. and Samuel, Naomi. (2017) Staff preparedness towards fire disaster in University of Jos Library was studied in this work. Survey method was adopted for this study. The materials comprised of questionnaire and interview. 106 copies of questionnaire were distributed out of which 98.11% were filled, returned and further found suitable for use. For analysis, different statistical methods like simple frequency tables, percentages, means and weighted averages were used. Face-to-face interactive session took place between the researchers and the University Librarian on issues of Disaster Management Plan in the Library in the interview conducted. Results obtained from the analysis of the questionnaire revealed the positive aspect, that majority of the respondents were quite aware of the fire-safety rules and safety measures in the libraries. This was indicated by 82%. Majority of the respondents, 66.01% were moderately aware of the availability of fire-fighting equipment in the library. The study indicated that, majority of the respondents were not aware of the use of the fire-fighting equipment, approximately 34.83%. The study also revealed that, majority of the respondents never checked the functionality of the fire-fighting equipment, nearly 40.4%. Other most important finding of this study was that the majority of the respondents were not aware of retrieving ways of a damaged library resources in print and in digital media. This was indicated by a high percentage of 38.75% and majority of the respondents were not prepared towards salvaging partly damaged resources in print and in digital media, indicated by 35%. Also, various respondents agreed that there were constraints encountered when managing fire disaster in the library nearly 79.5%. It was found in the interview result that there is a Disaster Management Plan in the library developed a few years ago. The Plan is still presently in use. Concluding, it was recommended to all the library Staff that they should be informed by the Library Management about the availability of a Disaster Management Plan in the Library, so that it could be used when needed. Every employee should also be assigned different roles to play in order to manage disaster of the lib. The Disaster Management Plan should also be evaluated by a Committee to find out if there is need to review its content and improve it's working.

Rhoda O. Ishola (2017) This study is regarding preservation of frequently-used collections in University Libraries. The questionnaires were carefully designed for the respondents. Researcher gave forty-nine copies of the questionnaire were given to the respondents out of which not all but 41 were retrieved and found usable for analysis and further study. The study found out that there is no written preservation and conservation policy in the libraries studied, in few cases where preservation policy exists though unwritten, they are not adhered to. Majority of the respondents, 85.4% agreed that libraries do not train staff on preservation of data and other documents. Therefore, the library staff had low knowledge of preservation of library materials. Further findings

of the present study revealed that in the libraries there were problems in the preservation and disaster management practices. The study recommended among others that regulatory bodies of Academic institutions (e.g. NUC) should make it mandatory for all the academic libraries to have preservation and disaster management policy. And these bodies should regularly check and make it sure they follow them.

Azerikatoa D Ayoun (2015) The importance of disaster management plans for library staff relies on their effective and efficient utilization to wisely handle library disasters. The present study deals with the evaluation of the preparedness of Ghanaian polytechnic libraries for disasters. This study also focusses on the various measures taken to deal with any kind of disaster in library. The study was based mainly upon the qualitative approach, the study interviewed five head of libraries and twenty-five selected staff members. The members were selected via purposive and convenience sampling techniques. Data was analysed using interpretative techniques. The results of the study clearly indicated absence of basic security policies and disaster plans. Polytechnic libraries were found to be ill-prepared for any disasters. Therefore, it is recommended that the libraries should develop policies for disaster management, organize training programs for staff in order to increase their awareness about disasters.

Bansal, Jivesh. (2015) The present study details about the indispensable importance of disaster plan and management for the efficient functioning of libraries. All the libraries and information centres are vulnerable to the wide range of disasters, which could be man-made or natural. This paper highlights various types of disasters or natural calamities that can fall upon libraries and can harm them. These disasters pose threats to library buildings, important collections, equipment and to the entire system. Therefore, it is advised to do meticulous disaster planning for mitigating the hazardous effect of disasters on libraries.

Zaveri, Parul. (2015) The purpose of this study is to aware people for disaster management and its consequences. With the growth in digital resources in libraries, they have progressed a lot. The purpose of this paper is to make an understanding of the issues related to digitalization of data and its protection in libraries of India. In this paper questionnaire based survey of 276 libraries in the Western region of India was conducted to find out the digital data protection measures taken by them. The paper provides an overview and analysis of the trends in digital data protection in the libraries of India.

Rehman, U.R. (2014) The aim of this article is to explore the importance and measures that can be taken to avoid the man-made disasters and minimize the effect of all types of natural disasters in the library. Current literature on disaster management needs to be made to determine the breakthrough ideas for this problem. In the recent past, in all parts of the world, disasters in libraries and other related information centres have been noticed. And these disasters are both types, manmade and natural disasters. Why Disaster Management is important? Disaster management” includes disaster control planning. It also focuses on broader issues for a successful implementation. Recently the term “risk management” has come into picture, which means problems of known risks at source. Good disaster management cannot prevent any disaster from happening like fires floods, thefts etc., but their effect could be greatly minimized utilizing disaster management plan. Disaster control should be a systematic plan which is properly structured and entire staff should have a good knowledge of it. Disaster management is considered to be most important because of crucially of the materials and services provided in the libraries. It is also important because it severely affects the security measures of the library. Library disasters causes the destruction of the reading material, structural facilities and also sometimes human lives as well. Therefore, in order to prevent the losses caused by disasters, it is necessary to take precautions. taken by Indian libraries currently.

Rattan, Pardeep. (2013) The main focus of the paper is to mention out the possible roles of library professionals in case of disasters, besides their regular/routine jobs. Detailed concept, types, man- made disaster and natural disasters have also been discussed in detail. This paper highlights the role of library professionals in managing the emergencies of library disasters. The library professionals have their role for the library and information centres and also for the local community. Information and communication technology has a very important role in the reduction of damage caused by any kind of library disaster. The paper also briefly mentions the initiatives taken by UNESCO in educating and spreading awareness among people regarding reduction in the impact and effects of any potential disasters or any emergencies. At the end of paper, the future vision for preparing a disaster reduction plan by librarian is also noted as a vital thing. Also, it is equally important to make society aware of disasters, so that they could play their role in fighting from this disaster, when time comes.

Biswas, Bidhan Chandra. and Choudhuri, Sabuj. (2012) Any library may get the contents to serve their clients from various sources and forms, particularly in the higher education and research institutes in the

developed world. This is done in order to satisfy the need of researchers regarding important contents that inspire better research. This paper states that all the libraries and information centres must take adequate measures to save their collection from all kind of disasters be it natural or man-made hazard. In order to save the collection and stored information from any kind of disaster libraries and information centres need to have a strong disaster management plan. In this the role of digital information is most important. This paper briefs about the understanding of disasters, their meaning, types, disasters management plan, cited examples with images, all kind of collection from the libraries which have undergone any kind of disaster. This paper also provided various sources for digital information to mitigate it. This paper makes it clear that for heralding better tomorrow, a concerted effort is needed in this regard.

Echezona, R. I (2012) This paper explores the disaster management in University libraries of South Eastern Nigeria. This paper deals with a survey research design for gathering information from selected University libraries in South Eastern Nigeria. Data collection was done using questionnaire and thus questionnaire was the main instrument for data collection. For analysing the data various statistical measures like percentages, mean and standard deviation were taken into account. The present study revealed that some libraries were aware of disaster management, while others have low level of knowledge of it. The level of their knowledge regarding disaster management was not satisfactory, which imposes a serious threat of loss of important data. In questionnaire various respondents gave the opinion that University Libraries of South Eastern Nigeria should be aware of various library disasters and thus should also have some preparation regarding the disaster management, in order for not to lose any important data. The present study also identified the problem behind the poor disaster management in University Libraries of South Eastern Nigeria. Certain problems that affect disaster management were the lack of disaster preparedness and alternate/recovery plans. The study also stated number of strategies that could be followed for effective disaster management. These strategies included training of firefighting equipment in offices and raising awareness of libraries regarding the need to protect documents from disaster. The paper concluding states that all the University libraries, all over the world should take the issue of disaster management very seriously and should have some prior preparedness to deal with any such situation in future.

Kostagiolas, Petros. (2011) This paper deals with the disaster preparedness of Greek libraries. The findings of this paper indicates that the majority of Greek libraries have not developed any specific measures for disaster management. This paper summarizes several disaster management approaches for academic libraries and has made suggestions for Greek academic libraries by analyzing the results of a nationwide conducted survey.

Kahn. (2009) This paper is a step-by-step guide for preparing to all types of library disasters and ways to respond to it. This paper is basically an instructional manual for writing a disaster plan. This covers all the important aspects of disaster response, recovery, prevention, and planning. It also provides checklists which can be used by any library for its disaster preparedness plan. Many libraries and museums in various countries have guidelines and preventive measures for emergency. These measures are applicable to both museums and libraries.

Hlabaangani & Mnjama, (2008): This paper is related to the disaster preparedness of few libraries of KwaZulu-Natal. In this study it was found that most libraries neither had disaster plans nor had any adequate procedures for disaster response and recovery. Enough staff with knowledge and skills to deal with disasters was also not available in public libraries of KwaZulu-Natal.

Mathews, (2007): Gave detailed guidelines for any library to prepare its disaster plan. The major components of plan are that the plan should be comprehensive, simple and flexible. The disaster plan is a mix of narrative text, directory information emergency plans and recovery instructions. Elements such as preventive measures, procedures in the event of disaster, contact numbers, list of disaster supplies, salvage techniques and revision procedure are main parts of a disaster plan.

Pearce-Moses and Yakel (2007): In this paper resources on internet to help cultural institutions including libraries from various disasters have been identified. It contains a useful guide, for resources on disaster management, which includes a list of organizations and their websites involved in disaster management is provided by the American Library Association (ALA). (American, 2010)

Yi Ling Wong & Ravonne Green (2007) This paper is about the overview of the theoretical aspects of disaster planning in libraries. A circular process of planning, prevention, response, recovery, preparedness, and training are the various stages of disaster planning in libraries.

Goel, (2006): This provide a guide for understanding the concept of disaster management and various issues related to it. Volume one is on disaster management policy and administration, Volume two deals with management of natural disasters and Volume three is on how man-made disasters could be managed. It provides a detailed coverage on the topic and the role of the government in preventing disaster.

Modh's, (2006): This book published guides Indian citizens about the preparedness for any kind of disaster. As on how a human being should protect himself/herself and help others in case of natural or manmade calamities. It explains the different types of disasters a community can face and the role of government in minimizing them.

Matthews and Feather, (2003): Library disaster management literature is mainly focused on efforts put by various national and international organizations in managing a disaster, disaster management plans of different types of libraries, treatment of various types of damaged collections. And also, how libraries could be pre-prepared to face disaster. It's also discusses roles of librarians during the disasters. It also covers all types of topics related to disasters and libraries, disaster control plan, risk management and disaster recovery in libraries. Also fire and flood affected libraries, cooperative disaster management among libraries and psychological aspects of disaster management issues.

McEntire (2002): this paper discusses the need for cooperation among various agencies to cope with the large disasters in a community, such as tornado, fire, earthquake, vandalism etc. which damages huge infrastructure in the affected area. The following listed are few of the international agencies which provide helps to disaster affected countries, as managing the disasters is not in the capacity of a person. The list includes, International Association of Emergency Managers (IAEM), United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA), United Nations Scientific, Cultural and Educational Organization UNESCO), World Bank, International Recovery Platform (IRP) and International Federation of Red Cross, Red Crescent Societies (IFRC). The World Disasters Report published by IFRC since 1993 highlights the latest trends, facts and analysis of contemporary catastrophes and their effect on vulnerable populations world-wide.

Roze, (2002a & amp; 2002b): This paper provides ten steps of disaster management from assessment of risk to continuity of services. This paper also describes stages and contents of a disaster plan and all the basic practical tips, which can be helpful for a library during disasters. Many organizations have also prepared readymade templates and checklists on web which can be used by librarians to prepare their own disaster plans.

U.K., The Council for Museums, Archives and Libraries, (2002): The council has published a self-assessment checklist for the disaster conditions. This council also suggests benchmarks to take care of the collection, storage area and furniture, security, building, emergency preparedness, environment monitoring and control; temperature, light and humidity control.

Grant, (2000): This paper mentions a week long power failure which occurred in 1998 seriously impacted services of nearly thirteen libraries of the University of Auckland, New Zealand. This report focused on damage happened to libraries and restoration efforts made by them to save the damaged collection. This reports narrates about the loss of number of books and restoration of library services after the disaster.

Giovannini, (2000): This paper emphasized the need for having co-role of architect, the librarian, the preservation specialist, and other specialists like engineers, climate control engineers and others. The engineers have a critical role in construction of a new library building. This paper also emphasizes the importance of factors like, location, features of the new building, internal and external environmental factors, temperature, humidity and air conditioning requirement for the library building. The paper critically suggests the importance of preventive strategies as vital tool in risk assessment of any building.

Foot (1996): This paper emphasizes on the conditions needed for disaster planning preparedness. There is a need for good building condition and knowledge of general measures required to be taken. Temperature, humidity control, air quality, prevention of fire and water damage is also a required information which is mentioned in this paper. Preventive measures should be taken from the time of planning a new library building.

Van Albada, (1996): this paper briefly enumerates libraries that have been lost or damaged due to disasters or calamities. This papers highlights the role played in the preservation of Cuba's library from different types of disasters, which includes war and political conflict. Academy of Sciences of Cuba, Cuban played an important role in the conservation.

SUMMARY OF LITERATURE REVIEW

The review done in this paper will help to get an overview of the work. It provided us the history of major disaster took place in India and Abroad. The review here is the collection of general information about disasters,

types of disasters. The review also peeks into different aspects and damages caused by disasters. Various major disasters took place till now in libraries, have been summarized. The review also contains the information on preparedness for disasters, reaction of librarians on disasters. Various ways of handling different types of disasters in libraries have also been summarized (McEntire, 2002; Cunha, 1992). Disaster preparedness in the libraries of Uttar Pradesh and have been Uttarakhand also reviewed in the review of literature section. The management handling of disasters has also been taken into account in the review. This review will help getting an idea about the disaster, its history and preparedness in libraries (Goel, 2006; Pearce-Moses and Yakel, 2007). This review also reflects an understanding about the above noted points, and thus will help in doing further valuable research in the field of library disasters management.

CONCLUSIONS

In their exhaustive study, it is concluded that the disaster is a big problem for higher education libraries the necessary preventive measures should be taken for this in Libraries losses due to disasters have shown growing trend in terms of data and property. These include the National India has become the first country to partner with Facebook on disaster response, but not in library's so many staff is not aware for disaster management

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A STUDY ON PRIMARY LAND DEVELOPMENT BANKS (PLDBS) IN INDIA WITH SPECIAL REFERENCE TO KARNATAKA STATE, INDIA

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ABSTRACT

Economy of the State is mainly dependent on agriculture as more than 65% of the total population is engaged in this sector. Credit is an essential sinew for the progress of economic development. In a developing economy like ours Agriculture Credit assumes greater significance on account of the fact that it is a critical input to support and sustain crop production. The Land Development Banks in India (LDBs) are essentially co-operative institutions. All the LDBs are registered under the Co-operative Societies Act. In a strict sense, however, they are semi co-operatives. In fact, they are limited liability associations of agricultural borrowers, as their members have limited liability. Further, unlike other co-operatives, LDBs do not have personal involvement in their functioning. Karnataka state cooperative Agriculture and rural development Bank (KSCARD) at the State level and Primary cooperative agriculture and 177 Primary Cooperative Agricultural and Rural Development Banks at the taluk level cater to the long term credit needs in the two tier credit delivery system. The National Bank for Agriculture and Rural Development (NABARD) provides refinance to the Apex Bank and KASCARD Bank. Present study is an attempt to the growth and performance of PLDBs in Karnataka over the period of three years (2016-2017 to 2018-2019). The analysis is done on the basis of the statistical data for the period of three years. Different aspects concerned to the PLDBs such as credit demands, collection of loan amounts, Balance amounts, recovery amounts have been considered for this study. The study revealed the general performance of PLDBs of Karnataka state.

Key words: Primary Land Development Banks (PLDBs) Agriculture credit, Credit recovery, Recovery performance.

1. INTRODUCTION

Many agriculture produce like food grains, fruits are transported by roadways and railways. Thus, it helps in employment of many people in this field. If the agricultural production is good, cultivators will earn more income. They will be in position to purchase manufactured products and other inputs required in agriculture. In short, we can say that the prosperity of the country will depend upon the prosperity of agriculture. Agriculture as a source of livelihood: In India about 65 to 70 per cent population dependent on agriculture, the population remains almost constant for number of years. On the other hand in the developed countries less than 10 per population dependent on agriculture. Role of agriculture in the field of international trade: Many agricultural products like tea, sugar, oilseeds, tobacco, spices contribute the major share in export. In addition to this, we are exporting fruits some vegetables and flowers to the other countries. Now days we are exporting basmati rice to foreign countries. The proportion of agricultural goods is to the tune of 50%. In addition to this, goods manufactured from agriculture products contribute 20%. Thus, agriculture contributes 70% in export.

Indian farmers need three types of credit, viz., short-term, medium-term and long-term. Their short-term and medium-term credit requirements are fulfilled by the co-operative banking institutions like PACs, CCBs and SCBs. Farmers have to borrow also for the long-term (for a period of 5 years to 20 years) for buying equipment like pump sets, tractors, etc., and for other development purposes, such as reclamation of land, fencing, digging of new wells, construction of a tank or tube-well, or buying additional land. Thus, a need for a special kind of institution to provide long-term finance to the agriculturists was earnestly felt. Consequently, land development banks came into existence. Initially, the land development banks were instituted in the form of co-operative land mortgage banks. The first co-operative land mortgage bank was established at Jhang, in Punjab in 1920. However, it did not function well. A real beginning was made by the establishment of the Central Land Mortgage Bank in Madras in 1929. Later on, the movement spread too many other states. The land mortgage banks grant long-term loans to the farmers against the conveyance of land as security. Since, 1966-67, the land mortgage banks are renamed as Land Development Banks.

Primary Land Development Banks (PLDB) banks were originally organized to cover one or a few taluks in the district. At present they are eligible to cover one development block. All land owners are eligible to become

members and borrow funds by mortgaging their land. The principal borrower is enrolled as 'A' class member and others who have interest in the mortgaged property are admitted as 'B' class members.

1.1 Association and Erection of Primary Land Development Banks in India:

The Land Development Banks (LDBs) are essentially co-operative institutions. All the LDBs are registered under the Co-operative Societies Act. In a strict sense, however, they are semi co-operatives. Infact, they are limited liability associations of agricultural borrowers, as their members have limited liability. Further, unlike other co-operatives, LDBs do not have personal involvement in their functioning.

The first Land Development Bank was started at Jhang Punjab in 1920. Even though the first LDB was started in Punjab, the real progress began when the land development bank was established in Chennai 1929. Not only that, land banks, land mortgage banks, agriculture banks, agriculture development banks are now called Land Development Banks in modern world. The Agriculture Credit Review Committee (ACRC) in 1989 emphasized the bigger role for the LDBs and recommended to incorporate development of agriculture and its allied activities including wastelands and non-farm sector development. The banks in due course diversified their activities and at the instance of the NABARD in the year 1982 they started financing for agriculture and rural development activities including wastelands. However, late eighties and the beginning of nineties were the crucial period in which LDBs adopted financing long term loans for more significant rural development activities like, village and cottage industries, rural artisans *etc.* Besides financing for rural housing schemes under NHB refinance was introduced by the banks in selected states like Kerala, Karnataka, Uttar Pradesh, Maharashtra, and West Bengal *etc.* In view of broader role of LDBs they are now known as State Co-operative Agriculture and Rural Development Banks (SCARDBs).

The working capitals of LDBs are raised from share capital, deposits and debentures, and borrowings from the State Bank of India, commercial banks and the State Co-operative Banks. However, a large part of their funds are raised through long-term debentures. The debentures can be issued only by the Central Land Development Banks and not by the Primary Land Development Banks. The Land Development Banks have no uniform pattern. In some states, they are unitary and in some others, they are federal in nature. States like Bihar, Gujarat, Maharashtra, and Uttar Pradesh have a unitary structure of the LDBs. Other states have a federal structure.

Under its federal structure, the LDB consists of two-tier institutions: (i) the Central Land Development Bank at the State level, and (ii) the Primary Land Development Bank at the district or Taluka level. Obviously, there is only one Central Land Development Bank in each state and one primary development bank at the district level. Thus, a state is normally supposed to have many primary land development banks as there are a number of districts. The Primary Land Development Banks are affiliated to the Central Land Development Bank in the State. In States like Himachal Pradesh and West Bengal, however, there is a mixed type of LDBs combining the features of both the unitary and federal structure. Under the federal structure, the Primary Land Development Banks deal with the farmers directly and the Central Land Development Bank deals with the primary land development banks. Under unitary structure, however, the state may have more than one Central Land Development Bank and they make direct deals with the farmers. In some cases, the Central Land Development Bank has its branches spread over the State and they do direct business with the agriculturists. In some cases, the Central Land Development Bank serves as a department of the State Co-operative Bank. This heterogeneity of the LDBs must be removed if we wish to evolve LDB institution of the first order in our country.

1.2 The Operational and functional of the LDBs:

The LDBs provide long-term loans to the agriculturists for permanent improvements on land. They usually charge 9 per cent interest. They grant loans against the security of land or other agricultural property. Loans are usually given on the first mortgage and sometimes even on the second mortgage of land or agricultural property. Generally, they give loans up to 50 per cent of the market value of the mortgaged property.

Several defects have been noticed on the operational side of the LDBs.

1. They charge very high rates of interest.
2. On account of red-tapism, there are the usual delays up to more than a year in granting loans.
3. No second loans are given until the first one is repaid.
4. They give loans only up to 50 per cent of the value of the land mortgaged. Thus, a very high margin is kept.
5. They adopt complicated procedures which ultimately force the illiterate farmers to resort to moneylenders to meet their financial requirements.

6. Quite often, loans are granted to discharged prior debts rather than for land improvement.

A major problem of the LDBs is over-dues. Another problem is the inadequacy of trained personnel. A third difficulty is regarding land as a form of security. Its valuation, titles, ownership *etc.*, are to be checked. As a result, the LDBs cannot avoid some usual delays in sanctioning loans to their borrowers.

The Reserve Bank of India had appointed a Committee on Co-operative Land Development Banks, under the chairmanship of Shri K.M. Das in 1973 to examine the working of land development banks. The Committee submitted its Report in December 1974 and made number of recommendations, such as: (1) there should be an integration of the short-term and long-term credit structures. (2) concrete efforts should be made to recover overdue, (3) lending operations of LDBs should be diversified by linking them with specific and other rural developmental programs, (4) there should be strengthening of the technical and managerial staff. Unfortunately no adequate steps have been taken by the state governments to implement these recommendations.

1.3 Development of LDBs in India:

A remarkable progress has been made by the LDBs in providing long-term finance to the agriculturists. The total number of LDBs (central and primary) increased from 481 in 1960-61 to 920 in 1984-85. In 1984-85 their number of membership had gone up to 10.6 lakhs. In 1984-85, their loans outstanding were to the tune of Rs. 3,643 crore and loan overdue amounted to Rs. 409 crores.

The Land Development Banks derive their funds from share capital reserves, deposits and debentures. The debentures, which account for most part of the funds on the bank, may be issued by the banks themselves or by the State Co-operative Banks on their behalf. They are subscribed for by the public or the Government in some cases, the principal and interest of these debentures are guaranteed by the Government. In Mumbai and Chennai Central Land Development Banks were established to finance Primary Land Development Banks by centralized debenture issues. These debentures are classified as trustee securities.

Loans and Advances the loans granted by land development banks are repayable within 20 to 30 years. Normally, loans are granted up to 50% of the value of the land or up to 30 times the revenue. Loans are granted only after a thorough verification of security title-deeds as well as the necessity for the loan.

1.4 State wise position Primary Land Development Banks in India

| 1 | Andhra | 184 |
|----|---------------|-------------|
| 2 | Assam | 16 |
| 3 | Bihar | 87 |
| 4 | Gujarat | 182 |
| 5 | Punjab | 41 |
| 6 | Himachal | 12 |
| 7 | Jammu and | 20+1 |
| 8 | Karnataka | 177 |
| 9 | Kerala | 22 |
| 10 | Madhya | 174 |
| 11 | Maharashtra | 270 |
| 12 | Orissa | 55 |
| 13 | Pondicherry | No branches |
| 14 | Rajasthan | 35 |
| 15 | Tamil Nadu | 223 |
| 16 | Tripura | -- |
| 17 | Uttar Pradesh | 203 |
| 18 | West Bengal | 21 |

Table 1: State wise position Primary Land Development Banks in India

Andhra Pradesh there were 184 primary land banks generally organized at the rate of one bank for each tehsil. Assam is of a federal type. Bihar out of these 4 branches covered one district. The present Gujarat state co-operative land development bank ltd was formed in May 1960. Karnataka state PLDBs was formed 25th November 1929. Kerala were 22 primary land development banks ltd. Which was formed in 1956. Madhya Pradesh PLDBs organized in March 1961. Orissa was organized in 1938. Punjab state in 1962 organized.

Tripura in 1960 it was organized the state cooperative bank itself was providing long term loans to cultivators for investment in agriculture. In 12th March 1959 PLDBs was established in Uttar Pradesh. In 7th January 1958 apex institution operates through 21 primary banks at the district and sub divisional levels.

2. SIGNIFICANCE OF THE STUDY

The primary land development banks play an important role in the growth of agriculture sector of Karnataka state. The significance of study is mainly to understand the growth of PLDBs in Karnataka and India.

3. OBJECTIVES

The study has been done with the following objectives,

- To study the foundation and progress of PLDBs in India and Karnataka.
- To study financial performance of PLDBs of Karnataka state.
- To make necessary suggestion for the improvement of the PLDBs in Karnataka state.

4. HYPOTHESES

The following are the hypotheses for the study.

1. The general functions of PLDBs have improved.
2. The recovery performance of PLDBs is satisfactory.

5. LIMITATION OF THE STUDY

The area covered by the study is confined to PLDBs in Karnataka state.

6. METHODOLOGY

The geographical area of the present study is restricted to Karnataka state in India. The study is mainly based on secondary data. Secondary data was collected from, Karnataka state cooperative agriculture and rural development bank, Bangalore and the source of secondary data are bank journals, annual reports, and brochure and their online resource like web sites.

7. PERFORMANCE OF LONG TERM CREDIT OF PLDBs in KARNATAKA STATE

Long term loan very essential to development of agricultural growth, 177 Primary cooperative Agricultural and rural development banks at the taluk level cater to the long term credit needs in the two tier credit delivery system. The Karnataka State Co-operative Agricultural and Rural Development Bank. (KSCA & RD Bank) was established on 25th November 1929 and is located in Bangalore. This is an institution handling matters concerning policy, planning and operations in the field of credit for agriculture and for other economic and developmental activities in rural areas. The National bank for agricultural and rural development (NABARD) provide refinance to the Apex bank (KASCARD Bank). In 2018-2019 disbursement of loans to 1,6735 members 233.77 crores amount was distributed out of which loans for new members was 1.0024 .loan distributed amount was 134.15 crores and out of which loans to SC/ST members was 1519. Amount was distributed 20.60 crores.

Long term loans disbursed by the cooperative credit system in the state was rupees 233 crores, respectively there by achieving progress of 84.56% as against the annual target. The scheme of disbursing loans to the farmers through Kisan Credit Cards (KCC) was started from the year 1997-98. As on 31-03-2019, 21, 67215 KCC Cards has been distributed of which 21, 08,944 KCC Cards holders are covered under personnel accident insurance scheme.

| District | Total number of Banks | Total memberships |
|-------------------|-----------------------|-------------------|
| 1. Bagalkote | 6 | 34658 |
| 2. Bangalore | 3 | 15879 |
| 3. Bagalore Rural | 4 | 22464 |
| 4. Belgaum | 10 | 50727 |
| 5. Bellary | 6 | 22165 |
| 6. Bidar | 5 | 39727 |
| 7. Bijapur | 5 | 51053 |
| 8. Chamarajnagar | 5 | 10304 |
| 9. Chikkaballapur | 4 | 20851 |
| 10. Chikmagalur | 8 | 38550 |

| | | | |
|--------------|-------------------|------------|----------------|
| 11. | Chitadurga | 6 | 67398 |
| 12. | Dakshina .Kannada | 5 | 57760 |
| 13. | Davanagere | 6 | 42489 |
| 14. | Dharwad | 5 | 65854 |
| 15. | Gadag | 5 | 21104 |
| 16. | Gulbarga | 7 | 54428 |
| 17. | Hassan | 8 | 52698 |
| 18. | Haveri | 7 | 34328 |
| 19. | Kodagu | 3 | 15985 |
| 20. | Kolar | 5 | 32980 |
| 21. | Koppal | 4 | 27388 |
| 22. | Mandaya | 7 | 42876 |
| 23. | Mysore | 7 | 39775 |
| 24. | Raichur | 5 | 9000 |
| 25. | Ramanagara | 4 | 19975 |
| 26. | Shivamogga | 8 | 45375 |
| 27. | Tumkur | 10 | 68608 |
| 28. | Udupi | 3 | 30592 |
| 29. | Uttara Kannada | 11 | 70078 |
| 30. | Yadagiri | 3 | 21657 |
| Total | | 177 | 1126726 |

Source: Department of Co-operation, Karnataka

Table 2: Primary Land development banks in Karnataka during 2014-2015.

The Table 2 shows that, number of district's PLDBs in Karanataka State. Primary Land Development Banks of the taluk level numbering 175 centres. Highest number of PLDBs in Karnataka state are at Uttara Kannada,Tumkur,and Belgaum districts. Lowest numbers of centers are at Yadagiri, Udupi and Banglore. .In this table clearly shows that large number of members having in PLDBs are in Tumkur and Uttarkannada districts.

7.1: Performance of long term credit structure in the Karnataka, from 2016-17 to 2018-19

| Sl no | Year | Long term target | Achievement | Total Target | Achievement | Percentage(%) |
|-------|---------|------------------|-------------|--------------|-------------|---------------|
| 1 | 2016-17 | 600.00 | 440.41 | 12600.00 | 11902.19 | 94.46 |
| 2 | 2017-18 | 500.00 | 198.27 | 13500.00 | 11618.88 | 86.06 |
| 3 | 2018-19 | 423.26 | 233.77 | 13423.26 | 11350.52 | 84.56 |

(Rs in Crores)

Table 3: Performance of long term credit structure in the Karnataka (2016-2017 to 2018-2019)

In 2016-17 long term target 600.00crores but it decreases in 2018-19. In 2016-17 percentage of achievement loan was 94% and again it decreases 84%in 2018-2019. We observe here long term target is decrease trend.

7.2 Performance of long term credit structure in the Karnataka, from 2016-17 to 2018-19

The position of recovery long term loans under the cooperative credit system in the state for the years from 2016-17 to 2018-19 is presented in Table 4.

| Sl no | Year | Demand | collection | Balance | Percentage of recovery |
|-------|---------|--------|------------|---------|------------------------|
| 1 | 2016-17 | 638.07 | 258.41 | 379.66 | 37.00% |
| 2 | 2017-18 | 852.33 | 429.71 | 422.62 | 50.42% |
| 3 | 2018-19 | 843.28 | 326.36 | 516.92 | 38.70% |

(Rs in Crores)

Source: Annual report of KASCARD Bank Karnataka.

Table 4: Performance of long term credit structure in the Karnataka, from 2016-17 to 2018-19

In 2016-2017, demand of long term loan was 638.07 crores and it was increases in 2018-19 the amount was 843.28 crores and collection of the loan was increasing trend in comparing 2016 to 2019 it was appreciable. And percentage of recovery was decreasing and increasing trend it was low recovery in 2016-2017 but it again increases in 2017-18 and it decreases in 2018-2019.

8. FINDINGS

- Collection of long term loans was increasing trend during the year 2016-2019.
- Demand of long term loans are increasing trend.
- Collection of long-term loans are decreasing trend.
- Collection of recovery loan in percentage is fluctuated during the year 2016-2019.
- Balance of long term loans are increased during the year 2016-2019.
- Karnataka, Maharashtra, Tamil Nadu, Madhya Pradesh states having highest number of PLDBs.
- Orissa, west Bengal, Kerala, Himachal Pradesh having low number of PLDBs.

9. CONCLUSION

Karnataka Land development bank provides long-term funds for various agriculture related projects besides development of land and business. The borrowing capacity of a member is generally determined according to the number of shares he holds in the bank. The main objective of the land development bank is to promote the development of agriculture and increase the agricultural production. A major problem of the LDBs is, however, the mounting over-dues. Another problem is of the inadequacy of trained personnel. A third difficulty is regarding land as a form of security. The LDBs provide long-term loans to the agriculturists for permanent improvements on land. They usually charge 9 per cent interest. They grant loans against the security of land or other agricultural property. In States like Himachal Pradesh and West Bengal, however, there is a mixed type of LDBs combining the features of both the unitary and federal structure. Land development banking made little progress in India. Many states are without a single Land Development Bank.

10. SUGGESTIONS

- A major problem of the LDBs is, however, the mounting over-dues.
- Concrete efforts should be made to recover over dues.
- There should be strengthening of the technical and managerial staff.

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BUY NOW, PAY LATER: THE NEW BUZZWORD IN THE WORLD OF DIGITAL FINANCE AND E-COMMERCE

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ABSTRACT

In India, Buy Now Pay Later (BNPL) services or schemes have not only become popular recently but are also dominating headlines as the new 'buzzword' of digital finance. This study attempts to investigate the factors that influence the consumers in the Kannur District of Kerala to make transactions and purchase products by making use of this mode of payment. This study also deals with the customer's perception towards the BNPL schemes and services. Data for the study were collected primarily from the users of BNPL services and the collected data were analysed and interpreted with the help of statistical tools such as the Mann-Whitney U test, Kruskal-Wallis H test, etc. The results of the analysis show that there exists no significant difference between males and females in their perception towards the BNPL mechanism. It also revealed that different income groups have no difference in their perception level. The study also tried to understand the spending patterns of BNPL users and found there is no association between income of the customers and their spending pattern.

Keywords: Buy Now-Pay Later, BNPL, FinTech, EMIs, Consumer Credit

1. INTRODUCTION

Buy now, pay later (BNPL) has become a hot topic in the financial world and it were in usage in western countries for the past few years. According to Worldpay, Inc. BNPL is the fastest-growing e-commerce payment method and is projected to triple its market share in North America by 2023. According to Marketing Week, a recent Thisismoney.co.uk survey found nearly one in five consumers say that they wouldn't shop with a retailer who didn't offer some sort of BNPL scheme. In India too, the BNPL has become the latest trend in consumer financing as well as an instant hit.

As the name suggests, BNPL schemes allow consumers to buy a product or use a service and make payments later at the end of a stipulated time period. A BNPL service or scheme allows a customer to buy products from its partner merchants online or offline and pay back its price within a pre-determined time period of say 15-30 days. In short, the BNPL facility allows consumers to buy an item and pay later in interest-free instalments. BNPL schemes are growing fast across the country since customers find such schemes not only interesting and convenient but also they find such services affordable.

Several FinTech companies, as well as e-commerce sites, are offering BNPL schemes as a mode of payment in various online transactions as well as offline purchases. Recently, even India Post has come up with an idea, Book Now, Pay Later. Reliance JIO, the largest telecom company in India, introduced "Recharge Now, Pay Later facility", an Emergency Data Loan facility that allows users to purchase a data pack and pay for it later. MakeMyTrip, one of the popular online travel companies in India, has been offering a scheme named "Travel Now, Pay Later" to selected customers whereby a customer can book a hotel or tickets by just paying a small amount and the remaining balance can be paid later in instalments. All these show the ever-increasing popularity of BNPL schemes. In fact, such schemes are becoming popular among the customers belonging to the millennials and Generation Z categories. Some of the companies offering BNPL services include PayTM (PostPaid), Flipkart (PayLater), Amazon (Amazon Pay), LazyPay, Simpl, Slice, MobiKwik (Zip). BNPL service providers typically target millennials who do not have credit cards. Some of these services even offer a micro-credit limit from Rs 100 to Rs 50,000 depending on the customer's credit profile.

2. REVIEW OF LITERATURE

Madiha Khan and Shejuti Haque (2020) conducted a study to identify the factors that influence the consumers in Dhaka city to make transactions and purchase products using BNPL mechanism. They found out that education, increase in the demand for luxury goods and improvement in the standard of living availing this payment mode have a significant impact on increasing the value of yearly purchase of products through buy now-pay later mechanism. This increase in the expenditure also revealed the impulsive purchase decision of the consumers.

Bernadette Kamleitner and Berna Erki (2013) conducted a study on Payment method and perceptions of ownership. They proposed that payment method also influences how consumers feel about the acquired good. They proposed that cash payment results in stronger psychological ownership. And the study showed that cash payers report higher levels of immediate psychological ownership than credit payers. And it should be noted that the Asian students under study did not exhibit this effect. It also found that those paying in cash experience no further increase in psychological ownership over time, those paying by card do.

Colin B. Gabler and Kristy E. Reynolds (2013) conducted a study on the effects of scarcity and discounts on purchase decisions in respect to buy now or buy later situations. They first implemented a market scenario to demonstrate that scarcity creates emotional value that increases purchase likelihood. Then they determined the levels of scarcity and discount that maximize purchase in a department store context. The findings suggest that the level of discount predicts the purchase of highly visible products; for less visible products, scarcity drives the decision.

Promothesh Chatterjee and Randall L. Rose (2012) conducted a study to know either the payment mechanisms change the way consumers perceive products. They argued that consumers for whom credit cards have been primed focus more on benefits (costs) when evaluating a product. They suggested that the effects of credit card stimuli go beyond increasing consumers' spending power and shifting consumption from the future to the present.

Keith Wilcox, Lauren G. Block and Eric M. Eisenstein (2011) examined how credit card debt affects consumer spending. In five experimental and field studies, the authors demonstrate that outstanding credit card debt increases spending for consumers with high self-control. They also show that this effect can be eliminated by increasing the available credit on the credit card. Thus, when the available credit is low, consumers with greater self-control increase spending, but when the available credit is high, they reduce spending.

Marsha L. Richins (2011) conducted a qualitative research to understand how the materialism, transformation expectation, and spending impacted the credit use. The author found that transformation expectations fully mediate the relationship between materialism and credit overuse. Evidence supports the idea that materialism leads simultaneously to a more favourable attitude toward debt and a stronger belief that life transformations will occur as a result of acquisition, and these two forces work together to increase credit overuse.

Richard A. Feinberg (1986) had tested the hypothesis that stimuli associated with spending can elicit spending responses. Four experiments and one study were conducted to test the stated hypothesis. The author found that Credit card stimuli directed spending. The author also identified that probability, speed, or magnitude of spending was enhanced in the presence of credit card cues. And it clearly admits the fact that the "buy now, pay later" philosophy has affected the American way of life.

3. STATEMENT OF THE PROBLEM

Buy Now, Pay Later services are becoming more and more popular as an alternative of credit cards, which everyone couldn't afford. On one side, e-commerce giants like Amazon and Flipkart are offering credit facilities to their consumers in the form of their own exclusive Shop Now, Pay Later credit limit, various Fintech companies are coming with their own mobile-based apps bundled with credit limit and offers like cashback, discounts, etc. This study attempts to find out the reasons behind the growing popularity of the BNPL schemes and services by investigating the factors influencing or motivating consumers to use buy now- pay later mode of payment. This study also deals with customers' perceptions towards BNPL schemes and services.

4. OBJECTIVES

1. To understand consumer's perception towards BNPL schemes
2. To identify the factors influencing BNPL schemes usage by the consumers
3. To analyse the most preferred BNPL service provider as well as to understand the spending pattern of consumers.

5. HYPOTHESES

1. There is no significant difference between males and females in their perception about BNPL scheme.
2. Different income groups have different levels of perception towards BNPL scheme.
3. There is no association between the income of the respondents and their spending pattern.

6. SIGNIFICANCE OF THE STUDY

This is the era of innovation and we can witness this innovation in every walk of our life today. BNPL schemes are no such an exception. BNPL schemes have certain sole advantages compared to other modes of payments and hence such schemes are becoming a popular mode of digital payment and have the potential to replace credit cards in nearby future. In fact, BNPL schemes can be termed as a Mini-EMI (Equated Monthly Instalments) plan. More and more e-commerce companies are partnering with various banks and FinTech companies for promoting such modes of payments. Also, more FinTech companies are entering into this market space and they are competing to attract more customers by providing add-on services like enhanced credit limit, more partner sites or companies, both online and offline applicability, referral bonus points, etc. Also, there are only a few studies conducted till date regarding BNPL services.

7. RESEARCH METHODOLOGY

The study mainly used primary data collected from 100 respondents using the convenience sampling technique with the help of a structured questionnaire. Data were collected from the users of BNPL schemes and services. The respondents belonged to the Kannur District of Kerala. The collected data were analysed and interpreted with the help of statistical tools such as the Mann-Whitney U test, Kruskal-Wallis H test, etc.

The Secondary data is used to evaluate the previous studies and recent updates done in this field. Using different statistical tools, the collected data is categorized and analysed.

8. ANALYSIS AND INTERPRETATION

Among the 100 respondents from whom the data for the study is collected, most of the respondents (54) are males and the remaining 46 samples constituted the female population under study. Out of these 100 respondents, 36 respondents belonged to the 'above 30' age category, 34 belonged to the 'below 25' age category, and 30 belonged to the '25-30' age category. Among these 100 BNPL users, 46 respondents were graduates and 38 were post-graduates and the remaining 16 users have only high school education. 42 respondents had a monthly income of Rs. 20000 and above. The monthly income of 31 respondents was between Rs.15000 and Rs. 20000 while 27 respondents belonged to the 'below Rs.15000' income category. 38 respondents were self-employed or were entrepreneurs, while 37 were employed either in the private or in the public sector. The remaining 25 respondents were students.

Among the 100 respondents, the majority of the respondents (91) had an opinion that the BNPL payment option offers more convenience than the debit and credit cards and they had a belief that such methods may replace or have the potential to replace the credit cards in the nearby future. Most of the respondents (77) were of the opinion that BNPL schemes or payment options often resulted in impulsive purchases. The majority of the respondents (88) either strongly agreed or agreed that BNPL schemes provide them more purchasing power and were of the opinion that they relied on BNPL schemes more during the post covid period than the pre-covid period.

Out of the 100 respondents, 45 respondents have made a late payment and thus had incurred a late fee under BNPL payment mode. The majority of the respondents (88) have either strongly agreed or agreed that BNPL service providers need to provide higher credit limits and they are of the opinion that BNPL service providers also need to increase the repayment tenure. Only a few respondents (23) were concerned about the data and security while opting for the BNPL mode of payment. Among 100 respondents, 41 respondents had a regret feeling after purchasing things via their available credit limit through the BNPL mechanism.

8.1 Testing of hypothesis, No: 1

H0: There is no significant difference between males and females in their perception about BNPL Scheme.

Table 1: Mann-Whitney U test for equality of means of perception about BNPL Scheme

| Test Statistics | |
|------------------------|----------|
| Mean Score | |
| Mann-Whitney U | 1026.000 |
| Wilcoxon W | 2566.00 |
| Z | -1.472 |
| Asymp. Sig. (2-tailed) | .141 |

Table 1 shows that the significance value of Mann-Whitney is 0.141 > 0.05. Therefore, the hypothesis that there is no significant difference between males and females in their perception about BNPL Scheme is accepted.

8.2 Testing of hypothesis, No: 2

H0: Different income groups have different levels of perception about BNPL Scheme.

Table 2:

Test statistic of Kruskal-Wallis H

| Test Statistics Mean Score | |
|-------------------------------|-------|
| Kruskal-Wallis H | 2.897 |
| df | 2 |
| Asymp. Sig. | .235 |

The test shows that the significance value of Kruskal-Wallis H is $0.235 > 0.05$. Therefore, the hypothesis that different income groups have different levels of perception about BNPL Scheme is accepted (Table 2).

8.3 Testing of hypothesis, No: 3

H0: There is no association between the income of the respondents and their spending pattern.

Table 3:

Test statistic of Kruskal-Wallis H

| Test Statistics Mean Score | |
|-------------------------------|-------|
| Kruskal-Wallis H | 1.800 |
| df | 2 |
| Asymp. Sig. | .407 |

According to Table 3, the test shows that the significance value of Kruskal-Wallis H is $0.407 > 0.05$. Therefore, the hypothesis that there is no association between income of the respondents and their spending pattern is accepted.

Table 4: Preference of BNPL Schemes / BNPL Service Providers

| BNPL Scheme/Service Provider | Weighted Rank Total | Rank |
|------------------------------|---------------------|------|
| Flipkart PayLater | 730 | 1 |
| Paytm PostPaid | 500 | 2 |
| LazyPay | 435 | 3 |
| Amazon PayLater | 384 | 4 |
| MobiKwik Zip | 323 | 5 |
| Simpl | 219 | 6 |
| Freecharge Pay Later | 209 | 7 |

Source: Primary Data

Table 5: Factors Influencing BNPL Usage

| Factors Influencing BNPL Usage | Weighted Rank Total | Rank |
|---|---------------------|------|
| Less formalities | 425 | 1 |
| One-click payments | 315 | 2 |
| Quick refunds | 311 | 3 |
| Zero processing fee / No hidden charges | 296 | 4 |
| Wide range of partner sites | 153 | 5 |

Source: Primary Data

Table 6: Spending Pattern of BNPL Users

| Spending Pattern | Weighted Rank Total | Rank |
|-----------------------------------|---------------------|------|
| Electronics / Accessories | 407 | 1 |
| Clothing and fashion items | 315 | 2 |
| Books / Recharges / Movie tickets | 308 | 3 |
| Food | 270 | 4 |
| Household essentials | 200 | 5 |

Source: Primary Data

By analysing Table 4, it can be clearly understood that most of the customers preferred Flipkart's PayLater facility in the first place. 'Paytm Postpaid', the BNPL scheme introduced by Paytm, was ranked next in the preference order. The LazyPay application which was owned and developed by the Fintech company PayU Finance India Private Limited was ranked third by the customers followed by Amazon's Pay Later service. From Table 4, it can be also interpreted that the customers least preferred BNPL schemes named 'ZIP' offered by the Fintech company 'MobiKwik', services provided by Fintech company named 'Simpl' and by 'Freecharge', a wholly-owned subsidiary of Axis Bank Limited.

Table 5 analyses the factors influencing the BNPL usage by the customers and it's clear that most of them use such schemes and services since there are only a few formalities to be completed by the users in order to get a credit limit. Eligible customers or users can get a credit limit with minimal documentation and this process is 100% online and paperless. The users need to enter their PAN number and Aadhaar number and with OTP based e-KYC process they can complete the documentation process with ease. One-Tap check-out process offered by the BNPL applications was the next factor that influences the customers to go for it. BNPL users also get instant refunds after cancellation of an order or due to failed transactions. They need not wait for 5-7 working days to get the refund amount in their account as in the case of payment by a debit card or net banking. Almost every BNPL service provider offers a credit limit without any additional charge or fees and this feature constitutes another motivating factor for the usage of BNPL service by the customers. Also, customers can avail themselves of such a credit limit say for 15 or 30 days without any interest or other charges. They need to repay only the limit they had utilised. No more, no less. With the available credit limit, BNPL users can shop online as well as offline with more than 100+ apps, websites, stores, etc. but, this motivates the customers or users not so high as compared to the other features or facilities (Table 5).

Table 6 deals with the spending pattern of BNPL users and it can be interpreted from the table that most of the customers utilised their credit limit for purchasing electronic goods or electronic accessories. Purchase of clothing and fashion items comes next in the list, followed by the purchase of books, movie tickets, and recharges. Only a few prefer buying food items and household items with their credit limit.

9. CONCLUSION

Today, the buy now-pay later mechanism has become a much-practiced and preferred mode of payment. This study investigated the factors influencing consumers to use the buy now- pay later mode of payment as well as their perception towards BNPL schemes and services. It also aims to find the reasons behind the growing popularity of the BNPL schemes and services. The study found that there exists no significant difference between males and females in their perception of BNPL Scheme. It also revealed that different income groups have certain differences with regard to the levels of perception of BNPL schemes. The study also tried to understand the spending patterns of BNPL users and found there is no association between the income of the customers and their spending pattern.

Flipkart's PayLater service is the most preferred BNPL service by the users followed by Paytm Postpaid. According to the users, the LazyPay app is ranked as the third-most preferred service provider. Amazon PayLater comes next. Mobikwik's Zip, Simpl, etc. are less preferred by the users. The hassle-free documentation offered by the BNPL providers is the main factor that influences or motivates the customers to go for it. One-Tap checkout feature, instant refunds, etc. also influence the customers to use BNPL mechanism for shopping.

The study also revealed certain insights into the spending pattern of the BNPL users. Most of the users utilise their credit limit for the purchasing of electronic items or accessories followed by fashion items and clothing. Some users use their approved limit for recharges and for booking movies tickets and for purchasing books. Only a few users order food or household essentials with their BNPL credit limit.

BNPL payment schemes have various advantages like less paperwork and formalities, zero processing fee, zero interest, One-Tap checkout, or one-click order completion. There is no role for both debit cards and credit cards under this mechanism. The credit limit offered by the BNPL apps and service providers can be utilized both offline (scan and pay) and online (UPI mode) transactions. Even though this facility has numerous advantages, it is also not free from limitations. Some of the limitations of BNPL payments include shorter repayment tenure, penalties, and fines for repayment delays, etc. Also, delays in payments can have a negative impact on the credit score of the customer or the user, which can lead to a decreased credit limit or there are chances for getting the credit limit blocked.

There is no doubt regarding the usefulness of the BNPL mechanism for both the users and service providers. An increase in the repayment period can be more beneficial for both the customers as well as the partner outlets or

companies. BNPL service providers can increase or enhance the credit limit of their customers since it results in impulsive purchases. Some BNPL services or schemes can be used only on online platforms. For Example: Flipkart PayLater. Removing such restrictions and allowing them to be used both online and offline can attract more users to these platforms. The service providers can also try referral bonuses in the form of increased credit limits to their users. In all sense, the future of digital payment is here!

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THE IMPACT OF THE DIGITAL PLATFORM ON ONLINE LECTURERS AND CLASSES, AS WELL AS THE COLLABORATION OF ORGANIZERS

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ABSTRACT

With the emergence and spread of the deadly Corona virus known as COVID 19, the world as we know it has altered within a short period of time, the world will never be the same again. This research examines the catastrophic consequences of the new pandemic virus and the subsequent lock-down, which means that the offline classroom is transformed into an online study. It examines and depicts the many online venues for teaching, the resources, methods and technology to guarantee that education does not cease for pupils. It also highlights the platforms, technology that may be utilized for online exams in a secure and fraud-free environment. It also looks at the difficulties faced by the use of online techniques of education. On the basis of literary reviews, a framework has been developed for providing students with improved online experience in the classroom so that online courses are as effective as or even better than offline courses. Empirically, the factors were evaluated using a structured questionnaire. The findings show that pupils prefer the multimedia studies method. Due to binary logistic regression, poor Internet connectivity, COVID-19 awareness, enough material sources, strong open online courses, favorite online methods and online study satisfaction are of importance in terms of online course delivery models or attitudes to a 5% level COVID-19 pandemic lock-down. The research suggests ways of teaching online, however the study indicates that on-line study satisfaction is of importance for the online teaching model or attitudes of locking up the COVID-19 pandemic at a meaningful 5 percent level.

Keywords: Education System, COVID-19, Online Class, Technology

INTRODUCTION:

Duchy institutions across the globe have moved their education and learning procedures and have worked hard to prepare remote learning to guarantee continued education. During this process, some had no tough duties or difficulties since they had previously implemented online or combined learning before the epidemic. Some institutions, teachers and students were not prepared to accommodate the circumstances, however, and thus it is essential to consider the degree to which professors are prepared to teach online. This study seeks to assess professors' preparedness for an unforeseen pandemic. It also seeks to examine the limitations and difficulties that teachers need to overcome to teach a class online. This study is based on a mixed technique approach. Readers were polled through online questionnaires and various themes were built from the qualitative data collected. The findings indicate that lecturers have high technical baseline competences to use e-learning platforms for on-line courses, rapidly adapted to the usage of LMS and most have a tactical solution with inadequate practicality for the majority of on-line lectures, but no strategic solution. They were not optimized since they did not completely feel that they could accomplish the objectives of learning. They were not optimized. This article discusses the theoretical and practical consequences

The pandemic of Corona Virus is a curious, highly transmissible, viral illness particularly among individuals. In Wuhan, China, COVID-19 was discovered in the final week of December 2019 and a worldwide health emergency was recognized by the World Health Organization as of 30 January 2020 due to the totally unique mental strain of corona virus. The Public Health Organization has verified a "world health emergency of global concern" (<https://doi.org/10.1021/cen-09805-buscon4>) that the rapidly developing coronavirus epidemic is in China. The illness is spreading all over the world and killing many people and bringing down the different economic, educational and social activities across the globe.

The death rate varies from 2% to 3%. The epidemic of SARS (MR10%) or MERS (MR35%) in 2012 is significantly less serious than that in 2003. In older people (over the age of 60) and those with pre-active health problems the risk is only high and about 80 per cent of people have mild and healthy symptoms in 2 weeks. The threat of death is high. Most symptoms are frequently cured by time (the Live Dash Box, as reported on 11 March 2020) (John-Hopkins-Center for System Science and Engineering).

In light of this forgotten process, all learning institutions across the world suffer a clear and impending rupture. This is an effort to prevent the virus from infecting the students or the professors. This has, however, caused the kids at home inadequate behaviors since they are idle and thus contemplate only bad.

Many nations across the globe, including Nigeria, have found a method to include these kids, and pupils return to school facelessly in some developing countries like the USA (via online). In Nigeria, an online educational platform for students and any other researchers was created (academia.nitda.gov.ng). This is a commendable effort, but is hindered by resources such as power, Internet and awareness.

As a result, all hands now have to be on the desk, evaluating and updating academic online platforms to fulfil our daily tasks and to facilitate the student's academic performance studies and assessments. This is the search for this research. Problem with research: physical dialogue is the worldwide teaching technique through which students and instructors get together in a planned place and engage physically. Public meetings are banned with the onset of this epidemic, making it difficult to educate them as long as there will be contact between individuals.

Therefore, it is important for a platform to replace the outdated teaching tools with the capacity to evaluate academic achievement by an effective and efficient manner. Research gap: no academic research on this subject; research needs to investigate platforms for on-line courses, etc.

Goals: The research examines and analyses the current status, opportunity and difficulties of online courses. It is a new investigation of the instructors' strategies and methods of online learning. The main objective of the course is to evaluate socio-demographic and associated aspects of how online courses are to be delivered during the COVID 19 lockdown epidemic in India.

REVIEW OF LITERATURE:

The online learning method as an element of the global synergistic study includes Web 2.0 advancements, which are utilized mostly in our undergraduate studies and now improve in the homeroom. Teachers say that these creative improvements assist increases their DE homerooms by upgrading their education to include our technological know-how which reflects their daily use of these advancements. The key developments in web 2.0 are wikis, websites, broadcasts, informal and online communities like YouTube. In any event, teachers and scientists may predict future improvements that may need the two understudies and educators to change, supported by an analysis of their viability. It is important to mention "how e-learning progress may prove to be pioneering stimuli for change as equipment for upgrading our education and teaching framework" (Shroff & Vogel, 2009, p.60).

Another breakthrough in the history of DE is the development of educational stages, also referred to as Knowledge Management Systems. Saadé and Kira (2009) depict LMS as a framework including educational tools, measurement equipment and an information repository. KMS testing includes WebCT, Blackboard, and Desire to Learn, which have increased with the assumption that in the current DE situation the top three LMS are inevitable. As a replacement to the open-sourced LMS frame, the last modular object-orientated dynamic learning environment (Moodle) has created a free option for the above phases (Unal & Unal, 2011). The gadgets performed are essential for the duties, exercises and substances of course (Singh et al. 2010; Smart & Cappel, 2006). "Unmistakably, learning environments maintained by innovation may flexibly change training instruments and structures" (Shroff & Vogel, 2009, p. 60) Researchers in this project are being introduced to Blackboard LMS, which includes study conversations, online journals, wikis, Web-based exams and tests, virtual groups, YouTube etc.

The concept of online training and therefore of using Moodle as an alternative for college was born following the development of worldwide temporary employment and after the progression of online courses and stage setup to improve instructors. In conjunction with communication, co-operation amongst understudies, batch development and a higher level of information admission there are several benefits. Whatever the benefits, several schools in Romania routinely accept to remain in customary education without further assistance. Moodle may be a step for Martin Dougiamas's early education (first form of Moodle was delivered on August 20, 2002). Moodle was used and developed by the global cooperation of the global network as a sound open source e-learning stage. Moodle is suggested and improves for flexible teachers, directors and pupils with a strong, secure and integrated foundation in order to create personalized learning circumstances. Moodle 2.6.2 was currently released on 27 March 2014. We see Moodle as a flexible web-based community-driven learning condition including all the components shown by Wang et al. (2004): discussion collecting and individual support model for the customer, collective methodology model and multi-faceted sector. Some of its designers were also interested in the collaboration and communication with humans in a web-based collaborative learning environment (Zhang et al. 2004). (Knight & Halkett, 2010). Different authors presented comparative experiences using smart e-learning devices like Moodle (Beatty & Ulasewicz, 2006). All of them pointer on Moodle's use as a tool for developing the psychological blueprint of understudies, for developing insight, for

advancing and encouraging understudies to speak to their accompanying persons, and for increasing the ability of understudy students to use in-depth learning through the use of information innovation. Pfahl et al. provide options for online collaborative learning (2001). Undergraduates engage with academic faculties and are ready to build new capabilities and shape their own guidance throughout this flexible online learning network. In this e-learning phase, we have used understudy time spent and access to their activities to organise and to provide the school work on a business shortage (Arbaugh et al. 2009).

MOOCs are Online courses that enable anybody to enroll in or finish without any additional cost (MOOCs) or open education (OER) MOOCs) (at any rate for the fundamental course). Cormier and Siemens argue that "open education and study" is a potential outcome. The degree of responsiveness of MOOCs varies from course to course and depends on the stage whether the course is realistic on a MOOC stage. While some CMOOCs have openly authorized their drug, other MOOC providers are just giving the substance to use it secretly. Coursera states, for example, that the texturing is "only for your personal non-business use" only among the major xMOOC phases (Kibaru, 2018). In any event, you will not replicate, reproduce, retransmit, distribute, misappropriate or transfer material in any event, nor may you change or modify or create subsidiary material mechanisms" (Rabe-Hemp et al., 2009). In this way, however, MOOCs are less open than OERs, a non-inhibited instructive content, which are usually given with an open authorization, "by item" for the growth of open education.

Online Class MOOC Description Analysis Tools:

- Impartus: This is the OER and training primary video proposal. This platform is presently used (<http://www.impartus.com>), by around 130 higher institutions in India.
- Webex: Webex is an internet application that enables you to conduct meetings remotely without leaving your home or workplace. It needs just a PC with a separate internet connection and telephone. This is a Cisco company product that is able to reach up to 100 customers simultaneously. The registration is free, but \$49 per month (<http://www.webex.com>) is needed.
- Zoom: This is another online tool, but a mobile application. It comes on Android and iOS. You may record sessions, work on projects, share or annotate each other online. It costs \$14.99 a week and allows cloud meetings to be recorded. The meeting takes just 40 minutes, however there is an infinite number of participants (<https://zoom.us>).
- Google Classroom: Google provides an open source web service for training, including an online assessment of the exam and task in a paperless manner. Google Classroom: However, before using this service businesses must register their G-Suit corporate account. To join to the course, students only need a valid E-Mail account. The connection to this is Google Drive, Google Docs, and Gmail (<https://classroom.google.com>) for effective resource sharing.
- Microsoft teams: Microsoft designs this as a collaborative all-round platform that offers chat, voice and calling. It enables immediate communications with built-in 365 offices for live streaming of documents. You just have to sign up for the package of business basics Microsoft 365; however, this package costs \$5 per month and per user (<https://support.office.com>).

Online Class Challenges

Smart KMS (Knowledge Management Systems) and LMS (Technology-built Learning Management Systems) increasingly need more self-direction. Evidence has indicated that students tend to better comprehend the integration of multimedia (Adnan, 2018) instructional methods. Despite institutions' attempts to adopt internet and ICT in education, particularly in the current state of lock-ups, these efforts are curtailed by various difficulties. Viz;

1. Internet lack in the majority of developing nations, such as Africa, is entirely online: the suggested framework, which is a backbone for the development of the dependable Internet network. Most poor nations such as Africa lack an Internet network adequate for their people, therefore e-learning is a significant setback.
2. Security: security is the biggest issue online. This is due to the cyber assaults by hackers. The system suggested will handle the records of students and exam outcomes. Any violation of access may lead to severe misadministration of information. Therefore, a significant safety has to be established.
3. Failure to provide infrastructures such as computers and ICT devices owing to the poverty level in certain areas, such as Africa: resources must be made accessible for a successful online classroom. These resources

include network gear, hardware and human resources but these requirements are virtually difficult, and thus a major problem in e-learning, given economic constraints in certain countries.

4. In many areas, like in Africa, there is a lack of power supply, technology without electricity cannot exist, and for Africans the question of energy is a regional problem. Most universities in Nigeria operated on generators exclusively because there is not enough electricity. This prevents students from accessing electricity online as anticipated because they cannot use electricity when away from school.

5. African corruption's lack of political will: democracy is now the world rule of law. Every country or area has its own political path; corruption in Africa has been a significant obstacle in regional development, making it unfavorable for development trends such as ICT, power etc.

6. Lack of government-referenced scalable policies. In some countries, there is a rigorous policy on usage of ICT. This may be owing to the cybercrimes that are now prevalent on cyberspace and the procedure of complying with such rules.

7. Lack of ICT expertise among students and lecturers: ICT knowledge is extremely limited in some nations and institutions. Indeed, some oppose accepting technology as a contemporary science. They see ICT as a scam idea and thus provide a very large barrier for these types of institutions / persons in the adoption of any ICT framework.

METHODOLOGY

The field of research will be conducted in India and others. All populations that provide online courses during the COVID-19 shutdown are studied. There were a total of 316 responses.

The design of research will be implemented in a cross-sectional manner. The cross-sectional survey methodology is mostly used to gather information about, and associated socio-demographic variables at a certain stage of, attitudes regarding online lockdown class delivery. The learning design was a cross-sectional study performed utilizing representative population-based samples. For multiple sample units, variables are gathered at the same time (one time shot), just the information obtained directly at a certain moment by respondents. Cross-sectional surveys are used to collect information about a single population at one time (Brecht & Ogilby, 2008). A questionnaire that gathers the experiences of individuals of a certain project or event would be an example of a cross-sectional survey.

Data Source

A cross-sectional community survey gathered primary data. The process of collecting data through surveys, interviews, or experiments called primary data collection. Primary data are online surveys for properly done inquiries by 316 respondents in India, one of the usual purposes of this data collecting research. Online surveys were efficient and therefore need more exponentially accurate survey data collecting compared to any other conventional methods of surveying computational logic and technology branching. They are simple to deploy and take the responders a minimum of time (316). In contrast to the other approaches, the expenditure needed to gather data from surveys utilizing online surveys is similarly minimal. For researchers, the findings are gathered for analysis and decision-making in real time.

Techniques for sampling

It is a technique of inspection in which the choice of people is based on comfort, individual preference or curiosity, for example. We used judgment samples for this assessment. In this instance, the person who takes the example immediately or backhandedly gets the ability to choose the examples.

Data Analysis:

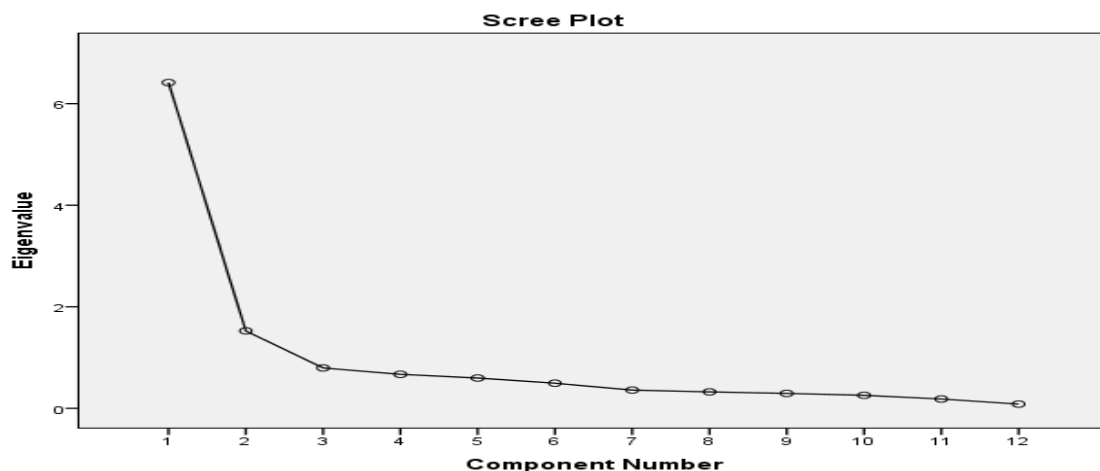
Reliability Test & Grouping variables:

| Reliability Statistics | | |
|------------------------|--|------------|
| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
| .912 | .919 | 12 |

Grouping of the Variables: Rotated Component:

| Rotated Component Matrix ^a | | |
|---------------------------------------|-----------|---|
| | Component | |
| | 1 | 2 |
| EI1 | .854 | |
| EI2 | .801 | |

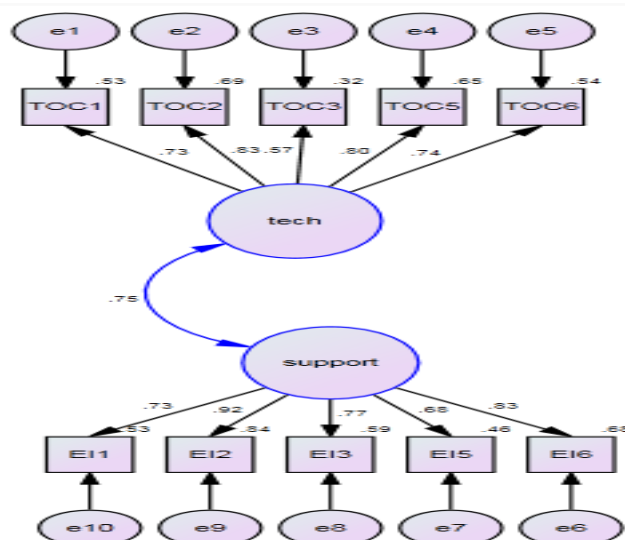
| | | |
|---|------|------|
| EI3 | .780 | |
| EI4 | .764 | |
| EI5 | .731 | |
| EI6 | .709 | |
| TOC1 | | .846 |
| TOC2 | | .748 |
| TOC3 | | .744 |
| TOC4 | | .729 |
| TOC5 | | .670 |
| TOC6 | | .662 |
| Extraction Method: Principal Component Analysis. | | |
| Rotation Method: Varimax with Kaiser Normalization. | | |
| a. Rotation converged in 3 iterations. | | |



| One-Sample Test | | | | | | |
|-----------------|----------------|-----|-----------------|-----------------|---|-------|
| | Test Value = 0 | | | | | |
| | t | df | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval of the Difference | |
| | | | | | Lower | Upper |
| EI1 | 206.916 | 315 | .000 | 4.8228 | 4.777 | 4.869 |
| EI2 | 185.228 | 315 | .000 | 4.7595 | 4.709 | 4.810 |
| EI3 | 196.990 | 315 | .000 | 4.7975 | 4.750 | 4.845 |
| EI4 | 171.627 | 315 | .000 | 4.7848 | 4.730 | 4.840 |
| EI5 | 144.836 | 315 | .000 | 4.7089 | 4.645 | 4.773 |
| EI6 | 196.990 | 315 | .000 | 4.7975 | 4.750 | 4.845 |
| TOC1 | 139.439 | 315 | .000 | 4.6582 | 4.592 | 4.724 |
| TOC2 | 155.460 | 315 | .000 | 4.6962 | 4.637 | 4.756 |
| TOC3 | 134.628 | 315 | .000 | 4.7468 | 4.677 | 4.816 |
| TOC4 | 234.649 | 315 | .000 | 4.8734 | 4.833 | 4.914 |
| TOC5 | 201.927 | 315 | .000 | 4.7722 | 4.726 | 4.819 |
| TOC6 | 148.131 | 315 | .000 | 4.7342 | 4.671 | 4.797 |

Analysis: Cronbach's Alpha values was .912 and the questionnaires was significant and through the Rotated Component & Scree plot the total number of the variable were two. Will comparing with One Sample Test, Maximum number of respondents was strongly accepting that, through the guidelines and Instructor support the application and functioning of the technology online platform is effective.

The Structure Equation Model was use to analysis the relation between the Technology Outcome (TOC) and Education Instructor Coordination (EI).



Analysis: As per the Model fit analysis, the CFI value was 0.926 (accepted range >.90) the values are significant. GFI value was 0.901 (accepted range >0.90) i.e., the model was significant and The NFI value was 0.91 (accepted range >0.90), RMSEA value was 0.012 (accepted range <0.50). As per the all the values, there was a significant relation between the Technology outcome and Education Instructor Coordination (EI).

CONCLUSION

The primary purpose of the research is to evaluate the education instructor and technology that help the students to learning and interact with the students. Socio-demographic and associated variables of online class attitudes during the COVID-19 shutdown in India. A cross-sectional community survey gathered primary data. Only the data gathered directly from the respondents at a given moment. We used judgment samples for this assessment. A sample of 316 individuals has been utilized. The descriptive analyses (distribution of frequency, cross-tabulation and percentage) and binary regression were thus employed. The model that might be used to a research on such a variable as to satisfy the hypotheses that should be fulfilled by the techniques was determined to be a binary logistic regression. A model of all variables began the backward logistic regression, excluding the variables with negligible coefficients until the model was best predictive. Because of the binary logistical regression, a poor Internet connection, COVID-19 awareness, sufficient resources, recommendation on MOOC, favored online methodologies and online studying satisfaction are important for the design or attitudes towards online class delivery during a COVID-19 lockdown of a 5% pandemic. A probability ratio and Wald test have used to analyses the importance of the logistical coefficients. The model was deemed valid because it had almost the same classification accuracy both for the model fit and for the validation sample.

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INFLUENCE OF INDO-ISLAMIC CULTURE ON KARNATAKA! 1600-1800 D – A STUDY

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ABSTRACT

The paper discusses about the growth of composite culture in Karnataka state. Rich cultural heritage of centuries has resulted in the State being a land of peace and harmony. As it is part of India, and the strong currents of multi-cultural currents can be seen in this part of the country as well. The rule of the Bahamanis, and Shahi kingdom, , being part of Mughal Empire, rule of Haider Ali and Tipu Sultan added to the development of composite culture in Karnataka. Discussion is on the effects of Indo-Islamic culture, effecting new style in art, architecture, and music.

Keywords: influence, spices, trade- routes, coastal, architecture, Indo-Sarsanic, Malabar, invasion, conquest, mysticism, kanqhas and interactions

INTRODUCTION

For more than 2000 years Karnataka had witnessed continuous habitation, and provided suitable atmosphere for the people. Coming of Islam into South India as early as 8th century, along with Sufi saints from Arabia and Persia led to the influence of Indo-Islamic culture into this part of the country. Karnataka being part of South India, it did influenced by the religion, and cultural practices of Persia and Arabia. Influence of Persia and India was not new to coastal Karnataka which had brisk trade contacts with these parts from a long time. The Arabian merchants being the middlemen who carried the spices, rice, cotton and silk from southern parts of India to Europe. The western parts of India was the first to expose itself to the influence of Islamic culture¹

Karnataka having a long coast line to the Arabian Sea, no wonder came under the influence of Islam quit early. There are records and writings which reveal the brisk trade that was going on. Discovery of seasonal Monsoon winds in 1st A.D. enhanced the chances of safe sailing towards South India regularly. Karnataka having a long coast line of Konkan coast and Malabar Coast had contacts with outside world. Author of 'Periplus of Erythrean sea' mentions several towns and inland trade routes that existed in that age. Ptolemy of "Geographia" mentions sea ports of south India. All these show that coastal Karnataka had outside contact for centuries.

Coming of Islam: Karnataka Rise of Islam as a powerful religion, and establishment of Arab Empire, capture of Sindh province in 8th century A.D, Inscriptions of Chalukyas of Anilhwara(Gujarat) fighting against the Arab incursions did effected trade link the south Indian merchants had. Now the whole trade routes fell into the hands of the Arab merchant². Arabs had contact with coastal Karnataka for centuries. Arab traders who settled in these parts were the harbingers of Islam to India. They were known for peaceful co-living, were supported by the Hindu rajas. The kings of Vijayanagara had close trade affinity, and allowed few of them to join their service. For the benefit of their Muslim soldiers, traders and officers built Mosques in their capitals, which prove parts of Karnataka had close affinity with Muslim world for long time³

Establishment of Bahamani kingdom in 1347 to the north of Tungabhadra is the major development of South India.⁴ changed the political religious and cultural scenarios of the Deccan. Though the wars of expansion, continuous enmity with neighbouring kingdoms weakened both the sides, it added to the cultural field.

Establishment of Bahamani kingdom in 1347 at Gulbarga, the political rivalry they had with their neighbouring Vijayanagara was mainly political in nature, the severity of the rivalry was about mastery Over Krishna Tungabhadra doab region. In this rivalry both the parties showed the shrewd tactics and one up-manship for strategical places, and control over coastal belt.

Vijayanagara rulers were not in peace when Bahamani came to be split into five Shahi kingdoms (Bijapur, Bidar and Gulbarga were in Karnataka). Now they had five rival power centres⁵ the battle of Talikote in 1565 had far reaching effect, as it destroyed the political system of Karnataka itself, making it a fertile ground for Mughal- Maratha rivalry, and after 1707, it was a playground for fortune seekers.

Chikkadevaraja Wodeyar had direct contact with Mughals.⁶ To protect his kingdom from Maratha onslaughts he had an agreement with Aurangzeb in 1704-called' Mysore treaty', whereby he got the administrative rights over Bangalore and surrounding areas, He also got a sword a signate ring with the title "Raja Jagadeva" imbibed, and durbar dress of honour(long over coat)⁷. It was just an administrative necessity, but with lot of cultural impact. The same dress code is followed by the royal family even today for their public functions.(As

seen the photos of royals of Mysore)The sword is still the possession and the title Raja *Jagadeva* was also used in their *bahuparak* (titles announced before arrival of the king)

Influence of Muslim rule:

Long period of five centuries, directly or indirectly Karnataka came under the impact of Indo- Islamic culture which exposed this part of the country for strong reaction. Politically the state was not in a position to oppose the invaders for long time. Frequent conquests, establishment of power centres in Karnataka surely led to reaction not just in religious, administrative fields but also in cultural fields. Main characteristic of this impact was it was peaceful and relationship between Hindus and Muslims were cordial, not giving many grievances. However, when these two strongly placed cultures came in under close contact.

Religious interactions: The political and commercial contacts did not affect the life and thinking of ordinary men. But it is the religious and social contacts, along with change of political centre from Indians to Muslim rulers opened the intellectual and cultural vistas. The simplicity and mysticism of these saints, message of love and co-living, their preference to live among the very ordinary people of the towns and cities made Islam religion of the land rather than sword wielding political masters.

Sufi saints who made India their home due to religious persecution in Arabia, made south India their centre of activity. Their preaching of peace and brotherhood, religious toleration. Between 9th century and 16th centuries hundreds of Sufi saints along with their followers came to south India. Establishment of sultanates in Bidar, Gulbarga, Bijapur, and surrounding areas witnessed a wide range of religious activities among the people, but most of them were popular, peaceful and preached the principle of co-existence. Khwaja Bande Nawaz Gesu Daraz of Gulbarga, Shaith Saad Zanjani Rahamatullah Auliya, settled in Gulbarga; the capital of the Bahamani.. Establishment of Shahi kingdoms led to spreading over of the Kanqhas of the Sufi saints belonging to Chisti, Auliya.

The dargah of Hazarat Khwaja Bande Nawaz wielded great influence over northern Karnataka. Even today it attracts a large number of people of all communities, the region is known for communal harmony.

Baba Budan Sab who settled near Chikkamagalur said to have influenced large sections of people of all communities. He said to have introduced Coffee, a favourite drink of Karnataka as the crop in surrounding areas, which even today is the highest producer of Coffee in India (My visit to the Dargah). For centuries it was known for communal harmony as, thousands of Hindus along with Muslims pay their respect to the Hazarat. Hazarat Saiyani bibi Ma(Mysore), Hazarat Hasina bi Ma in Hassan, Hazarat Jamal bibi Ma in Ratnapuri. (Hunsur) near Mysore, her sister [Hazarat Jamal Bibi ma near Arkalgud in Hassan district. (Visit to the place) are the few of the popular Sufi saints who had contributed richly to the composite culture of the state.

Bangalore, Chintamani, Chikkaballapur were the greatest centres of Sufi movement during 15th-18th centuries.. A number of Sufi Kanqhas did exist in Bangalore. Many of them were women saints who had great following among the people of all castes. Kunja Ma bee, Hazarat Ameena bibi Dadi Ma, Hazarat Mastana bee, Hazarat Syedani bibi Ma, and Hazarat Sayida Amma Jan of Mandya, Saidani Bibi ma of Mangalore are influential even today.

There was strong reaction of Hinduism to the arrival of Islam. It is the Sufi saints who succeeded to a greater extent in Karnataka in bringing communal harmony among these religions. Sufis helped for the development of composite culture in Karnataka. The Sufi Dervashes roamed every part of the State were honoured and were given shelter, irrespective of caste, or community. Even today most of the cities and towns have Dargahs, Kanqhas, where the people of all communities worship the saints. Their preaching was assimilative in nature.

Islamic education and Madrasa of Mahmud Gawan, Gawan was a minister, an educationist, and a thinker. He was responsible for the establishment of Madras for Islamic studies, which in time became a prominent Islamic institution of medieval India.] His contact with scholarly world brought high repute to the Madrasa. It served a long time, but now in depleted condition.

REVIEW OF RELATED LITERATURE

Deccany Urdu: Deccan Muslims patronised Urdu, rather than Persian or Turkish. Though several Persian scholars visited the courts here, there was not much effect. Local Muslim artists and writers had little influence by them. The court at Gulbarga local chieftains called Deccani nobles and foreign nobles. Somehow the writers and scholars of both were encouraged. Thus we come across a number of works in Persian, Urdu, and other languages came to be published

Development of Deccani Urdu was a major contribution of this composite. The court at Gulbarga, Bijapur and Bidar became centres of learning, Poets and scholars from North India, Persia, Arabia and African states were patronized by the Muslim rulers of medieval India. Kirmani was a notable scholar of the time. Great writer of Urdu that was quite different from Hindi was the sufi saint Banda Nawaz Gesu Daraz. His work 'Mirat-ul-Ashiqin is milestone in development of urdu which is often referred as 'deccan'. Other works of the time are: Shah M iranji's Shams-ul Ushaha. He was sufi saint .Kushnama, Kushnaz were the other important works. Great scholars like Muhammad Nusrat wrote 'Gulshane-Ishaq, Alinama, Tarik-i- Sikandari, Faiz's Masnvi. Shahi ruler Ahmed Shah was himself a musician, and scholar. He wrote ' Kitab-i- Navras' in Urdu . Ibrahim Adil Shah of Bijapur made Deccany urdu as the official language of the court.

Even today Urdu language is widely popular in South India and central India.

Music-Hindustani: Though the Muslim ruler's did not encourage music due to religious cause, but music imbibed in their daily life. One cannot deny the role of Suffi saints in popularising music among Muslims. Their devotional songs are melodious and popular.

In the courts of south India-Hindu and Muslim ruler's music was part of their ceremonies. Predominance given to music in Vijayanagara, Mysore and other courts influenced the growth of Hindustani music. Though Hindustani music originated in North India, it is quite popular in Northern parts of Karnataka. After the fall of Shahi rulers many chieftains, Nayaks, and even Wodeyars of Mysore patronised Hindustani music. Great singers like Pandit Kumara Gandharva and his disciples, Bhim sen Joshi, Mallikarjuna Mansoor, Gangu bai Hangal immortalised the name of Karnataka in Hinduistani music. Hangal, Dharwad, Bangalore and other places are the famous centres for Hindustani music.

Bidari ware: is a peculiar but beautiful art of painting the vases and other decorative pieces. It is the Muslim artisans of Bidar and surrounding areas has developed the art it is the contribution of the Bahamani kingdom. Beautiful artefacts are made out of mixture of copper and zinc, and delicately decorated with thin sheets of silver inlay. The art is centred on Bidar, thus it is called Bidari ware (spot study).

Kinnhala Art. Artefacts made out of wooden carvings. Once it was a great art decorating the houses of temples, houses etc. The Kinnhalaart is another s art developed due to the influence of Indo-Islamic culture. It was the painting developed using vegetable colours during the later days of Vijayanagara Empire., but was patronised but the rulers of Bahamani, and Shahi ruler. Now it is practiced around North Karnataka. Famous Channapatna toys were also prepared in same technique.

Architecture: Indo-Islamic art and architecture patronised by the Bahamani and Shahi rulers resulted in numerous buildings of beauty came into existence. Bahamans were great builders. Their example was followed by the Shahi rulers.

The building activity of the Bahaman was influenced by the structures of kaktiyas, Vijayanagara and the Nayakas. Introduction of Mortar, gypsum, coloured glasses, lime stone, marble were added to south Indian structure, which so far depend on stones.

Minars, Gumbaz, Gateways, use of horizontal beams, Zarokhas were taken by the palaces of the Maharaja, if not for the temples, residencies of the rich and the nobles had much influence of the Indo-Islamic style. The structure of Raja's palace, Kamal Mahal, Lotus mahal, Elephant stable etc... at Hampi are the best example of composite culture due to the mixing of both Hindu and Muslim styles in architecture.

Most important structures of the Bahamani period are in Gulbarga .These are the foremost structures having main characteristics of Indo Islamic architecture The fort at Gulbarga is a massive structure . The Masjid is very big There are two sets of tombs; one belonging to Bahamani rulers. It is also known as Haft Gumbaz , Tomb of Ahmed Shah-I Wali is significant structure with a huge doom. He was a religiously minded ruler who was also called Wali: saint. Other set of tombs of Barid Shahis

Buildings at Bidar: Bidar ruled by the barid Shahis also left beautiful structures of stone, ,brick , mortar and lime stones with its speciality of carved columns, Prominent buildings of Bidar or the fort which is strategically built with moot and watch towers. It is constructed out of stones and mortar within the fort or mahals, Rangan mahal, Solakhamba(16 pillars) mosque, and Chaubhara a watch tower.

Madrasa of Gawan the brick and stone structure with a minar is also big, .though in ruins attractions our attention, as it consisted of a big library with large collection of books.Bidar is also known for its Jiras or wells. The sultans had planned for water supply through wells and tanks.

Bijapur where the Adil Shahi dynasty ruled for 150 years is another center of Indo-Islamic. Adil shahis are renowned builders with deep sense of understanding of cultural ethos. Like other cities Bijapur is also surrounded by a fort extending up to six miles. It has several mosques; Jami masjid being the biggest. Most significant contribution of Shahi sultans was the Golgumbaz: as name suggest it has a huge circular gumbaz, with whispering galleries. Sangeet mahal, Sola kaman, Ibrahim roza, gagan mahal, Chand bavadi. Outskirts of the city has another beautiful city called 'navaraspur. Music loving sultan of the Shahi dynasty constructed a city with an open air theatre and stadia.

Conclusion: The article so far discussed numerous aspects of Muslim rule over parts of Karnataka adding to its rich cosmopolitan outlook and composite culture. Though the Muslim rulers ruled four to five centuries, the legacy they have left, the atmosphere of give and take that existed added to the multiplicity of cultural growth of music, literature, art, architecture, etc.

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ASSESSMENT OF THE EFFECTIVENESS OF INTERNAL AUDIT AS PERFORMANCE FACTOR FOR LOCAL AUTHORITIES

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ABSTRACT

This item is part of the vision to contribute to the improvement of the performance of local authorities through development of the culture of audit internal all highlighting its effectiveness through an internal audit capacity model explaining the levels of capacity that the audit can achieve to be effective and meet the intended objectives.

Keywords: Internal audit, performance, efficiency, Local authorities

INTRODUCTION:

For a long time, public organizations have shown enormous dysfunctions and impairments. They are often judged ineffective because of their organizational nature and the purpose of their institution (charreaux, 2006). Indeed, it is an excessive bureaucracy, expensive, non-innovative, and an overly centralized hierarchy, which leads to profound upheavals, in terms of debt and deficit (Albouy & Obeid, 2009). Improving their performance has therefore become a major issue calling for certain public management reforms grouped together under the expression of New Public Management (NPM) or new public management.

In this direction, thirty years ago, in the name of effectiveness and efficiency, the new public management recommended introducing into the bureaucratic structures and procedures of the public sector principles inspired by the private sector. The NPM has spread by modifying to varying degrees the structures and functioning of public administrations.

Continuing in the same direction, the Morocco's new 2011 constitution militates in favor of good governance and the principle of correlation between responsibility and accountability, which lays the foundations for a modern and responsible public organization.

Since then, the audit turns out to be an essential discipline to control the public sector more particularly the local authorities, to rationalize the management, improve the performance and ensure the good governance.

Admittedly, in the current situation, just like the Moroccan public sector, local authorities are subject to controls and audits by state bodies. However, these controls and audits are insufficient and do not make it possible to identify all their management and management aspects. cover all periods.

For better managerial efficiency, empowerment of its players and modernization of its areas, local authorities in Morocco must design appropriate internal audit instrumentation and methodology. To avoid approximation, the design must be guided by relevant criteria, broken down into modalities relating to various dimensions: spatial, temporal, human, technical and paradigmatic. Also, the design must result from the transcendence of the usual instrumentation and methodology, taking into account the specificities of local authorities.

To the light of what above, we seek through this article an analysis of the internal audit mission and its effectiveness within communities territorial, and we aim to answer the following questions:

How? 'Or' What can internal audit contribute to the overall performance of local authorities?

Can we consider the current internal audit mission within local authorities to be effective?

To be able to answer these questions, first of all we go highlight the notion of internal audit, its historical development and its theoretical framework. In a second place we will try to demonstrate the aspects who determine the effectiveness of internal audit and how the establishment of an internal audit service allows a community to achieve its objectives and be more efficient.

1 Historical development of the concept of internal audit

At the beginning of the Middle Ages, the Sumerians felt a need to control the accounting of agents. This cross-checking system consists of comparing information which has come from two independent recording sources.

But the word "audit" only appeared under the Roman Empire and more specifically from the 3rd century Jésus Christ², where it was in a broader sense.

The word audit, which comes from the Latin "audire", that is to say "to listen", the Romans used this term to designate a control in the name of the emperor on the management of the provinces. Subsequently, this control developed following the efforts of the English. The same goes for its objectives, which have focused mainly on fraud detection, progressively looking for errors and then publishing an opinion on the validity of financial statements, and finally on their regularity and sincerity.

It was not until the 19th century that legislators instituted the control of companies by external agents because of:

-development of industry, commerce, banks, insurance ...

- the burden which weighs on the auditor recognized as guarantor of the holders of capital with regard to the abuses of the managers, from the beginning of the XXth century and with the crisis of 1929 due to a bad disclosure of the reliable information. Not As a function in a company, internal audit appeared in the United States after the crisis of 1929. The crisis ended, auditors with a lot of experience in the accounting fields imposed themselves. It is at this time that the function internal audit arose.

Board synthetic: The evolution of the audit through the weather

| Period | Audit prescriber | Auditors | Audit objectives |
|------------------------|--|---|--|
| 2000 BC to 1700 | Kings, emperors, churches and states | Clerics, Writers. | Punish for embezzlement. Protect heritage. |
| 1700 to 1850 | States, commercial courts and shareholders | Accountants. | Suppress and punish fraudsters. Protect heritage. |
| 1850 to 1900 | States and shareholders | Accounting professionals Lawyers. | Avoid fraud and certify the reliability of the balance sheet. |
| 1900 to 1940 | States and shareholders | Auditing and accounting professionals. | Avoid fraud and errors and certify the sincerity and regularity of historical financial statements. |
| 1940 to 1970 | States, banks and shareholders | Auditing and accounting professionals. | Certify the sincerity and regularity of historical financial statements. |
| 1970 to 1990 | States, third parties and shareholders | Auditing and accounting professionals and consulting. | Certify the quality of internal control and compliance with accounting and auditing standards. |
| From 1990 | States, third parties and shareholders | Audit and consulting professionals. | Certify the faithful image of the accounts and the quality of internal control in compliance with standards. Protection against international fraud. |

The internal audit function developed with the creation of the ILA (Institute of Interne Auditor) in the USA in 1941, whose vocation is to promote internal audit and increase professional and technical competence of internal auditors through research and professional training.

In France, the internal audit function developed during the period 1965/1970; its development is the development of the French Association of Internal Control (AFCI) in 1965, which became the French Institute for Internal Audit and Control (IFACI).

In Algeria, the law 88-01 of 12/01/1988 relating to the orientation law of public economic enterprises (EPE) in its articles 40, obliges these EPE to create an internal audit structure. In 1993, the Association of Algerian Internal Auditors and Consultants (AACIA) was born and it became affiliated with the IIA.

In Morocco, it was around the 1970s that certain organizations, especially in the public and semi-public sector, set up internal audit units. Creation in 1985 of a Moroccan Association of Internal Consultants Auditors (AM.ACI) affiliated since 1991 to the IIA.

2 The theoretical foundation of internal audit

It has long been considered that internal audit found its legitimacy in the agency theory. By virtue of this theory, the complexity of modern organizations has transformed power relations: the owner - or "Principal" - gradually loses contact with the management of his organization. It is the shareholder who no longer has the means or the capacity to manage directly; it is the public power which loses contact with the management of organizations in which it owns all or part of the capital. And, as an aggravating circumstance, both gradually lose the ability to control what is happening.

Indeed, the operational managers - the "Agents" - always know more than the principal. Through this brief description, we can perceive behind the lines the criticism of the paralysis of boards of directors, the attempts to correct the nature of audit committees and more generally the proposals on corporate governance and the reorganization of state supervision.

The agency theory teaches that to remedy this situation of imbalance it is advisable to bind the Agent to the Principal by a contract at the end of which the operational manager must respect methods and objectives and provide information on the progress of business. But it never works completely: you can't predict everything and the Agent will always be the best informed of the two. Some even go so far as to say that sometimes the Agent develops policies that are not in the best interests of the principal. And it is here that the internal audit finds its theoretical foundation: representative of the principal, the auditor allows, with the information which he brings, to give again to this one the possibility of acting in full knowledge of the facts. We see well:

- That this theory implies a connection other than that resulting from dependence on general management, but rather requires a connection to the board of directors (or to the supervisory authority);
- That it can report on the compliance audit, since it involves providing information on the correct application by the agent of the rules imposed on him. But this theory, which is still widely invoked, does not take into account the efficiency audit in which the auditor has complete latitude to suggest new rules. This is why we add to it in this case the theory of common knowledge which implies collaboration and consultation between all the actors to face new and unforeseen situations and to define new rules.

The role of the internal auditor in making proposals is then justified and explained. It goes without saying that this new theoretical basis involves consultation and information structures (cf. corporate governance) but it better reflects the internal audit function both in its work and in its reporting.

Definition of internal audit

In our attempt to define the notion of internal audit, we will present three definitions.

□ According to The Institute of Internal Auditors: "Internal audit is an independent and objective activity that gives an organization assurance on the degree of control of operations, provides advice on how to improve them, and helps create added value. It helps this organization to achieve its objectives by evaluating, through a systematic and methodical approach, its risk management, control and corporate governance processes, and by making proposals to strengthen their effectiveness".

□ According to ALBERTO SILLERO "We can define the audit as being an analysis and control process, now applies to all the functions of the company. Thus, are there audits of production, sales force, quality, human resources and the accounting and financial statements of a company.

□ According to IFACI "Internal audit is the periodic review of the instruments available to a company to control and manage a company"

3 The effectiveness of internal audit

In order to measure the effectiveness of internal audit we called on a model of internal audit capabilities in the public sector the IA-CM which is a reference framework for strengthening and improving internal audit, through many small stages of evolution. These stages have been organized into five progressive ability levels. The model illustrates the stages through which an IA business can evolve as it defines, implements, measures, monitors, and improves its processes and practices.

Why the public sector?

- Internal audit varies considerably from country to country.
- Differences in culture, management practices and processes.
- Need for a governance model, including internal audit (IA).

The levels of the internal audit capability model for the public sector (IA-CM)

Level 5 Optimization: AI learning from inside and outside the organization for continuous improvement

Level 4 Managed: IA integrates information from the entire organization to improve governance and risk management

Level 3 Integrated: IA management and professional practices applied uniformly

Level 2 Infrastructure: Sustainable and reproducible IA (practices and procedures)

Level 1 Initial: Unsustainable, repeatable capabilities - dependent on individual efforts.

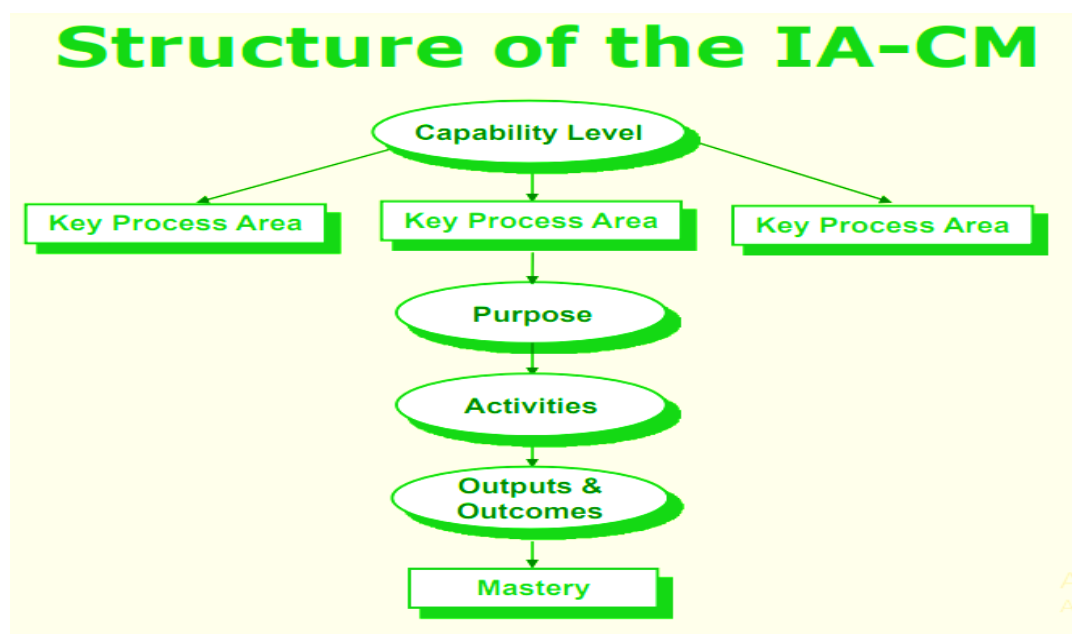
Why levels?

- Different performance expectations and measures in current practice.
- Capacity is built step by step.
- Need for a common framework map / concept.
- Helps select the appropriate level of capacity for an organization.

The elements of activity of IA:

The IA activity consists of the following, six elements:

- IA services and roles.
- Human resources.
- Professional practices.
- Performance management and responsibility.
- Organizational relations and culture.
- Governance structures.



4 Internal audit: for better performance local authorities

DEFINITION OF PERFORMANCE

The performance of firms has been defined by agency theory as the fruit of organizational choices. The performance of the company is one of the priorities in the eyes of the various managers of the company and its partners and is of great importance in the eyes of the various partners of the company, managers, investors or employees. It is a goal to be achieved. For this, several authors have dealt with the performance of the company and the best ways to achieve good profitability and improve it. Moreover, some authors like Charreaux (1997) believe that control mechanisms such as governance or auditing have an inevitable impact on performance. The governance performance relationship has been the subject of several theoretical and empirical studies which

have tried to establish a link between this control mechanism and the performance of companies. Governance has been understood through several mechanisms that represent these different aspects.

In management, performance has always been an ambiguous notion, rarely defined explicitly. It is only used in management control by transposing its meaning into English. It then designates the action, its result and its success⁴.

To explain performance, we will use the definition of Bourguignon (2000) because it brings together the three senses listed above and explicitly recognizes its polysemous character. Thus, performance can be defined “as the achievement of organizational objectives, whatever the nature and variety of these objectives. This achievement can be understood in the strict sense (result, outcome) or in the broad sense of the process that leads to the result (action)...”.

For Lebas (1995), performance only exists if it can be measured and this measurement cannot in any case be limited to knowledge of a result. The results achieved are then evaluated by comparing them with the desired results or with benchmark results (Bouquin, 2004). In this context, performance evaluation can be assimilated to “benchmarking”⁵.

The definition of Bourguignon (2000, p.934) applies as much to the organization as to the individual: “the person who achieves his objectives is efficient” (1995, p.65). The performance being defined, it is now necessary to look at its measurement. How to measure the performance of a company, an activity, a product, a person? Financial logic offers a solution, but which has been problematic for a long time. Bouquin (2004, p.63) represents the general problematic of performance as follows:

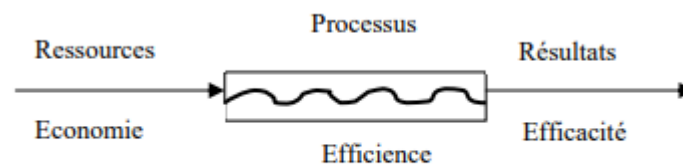


Schéma 1 : La performance (source Bouquin, 2004)

According to this author, the economy consists in obtaining resources at the lowest cost; efficiency is maximizing the quantity of products or services obtained from of a given quantity of resources: profitability (ratio of a profit to invested capital) and productivity (ratio of a volume obtained to a volume consumed) are two examples efficiency. Finally, efficiency is the achievement of the objectives and goals pursued. Measuring performance comes down to measuring the three dimensions that make it up.

PERFORMANCE MEASUREMENT IN THE PUBLIC SECTOR

In recognizing the problems of performance measurement in the public sector, several attempts have been made to gain a deeper appreciation of this concept in that specific area. Improving the quality of government services has become a necessity. The awareness of stakeholders, as well as financial restrictions, highlight the need for efficient use of public sector resources.

This is the reality of the public sector which has experienced setbacks in the provision of services deemed largely inefficient and inefficient. To provide certain services or guarantee so-called sovereign services or functions, governments have often turned to state enterprises. Unfortunately, these organizations have often been less productive than their private sector counterparts. They do not have this immunity against tormented phenomena such as the 2008 global financial crisis, corruption scandals, waste of resources and even bankruptcy.

Clearly, public sector organizations can therefore no longer be complacent and / or abdicate their responsibilities to monitor the performance and performance of those who hire to provide services on their behalf. Halachmi (2005) agrees that developments in the public sector call for a greater understanding of performance measurement and reporting. However, this observation remains credulous in the sense that it does not take into account the complexity of the public sector.

It is important to note that Bigliardi et al. (2011) indicate that in general in a public sector, the proposed changes require more time than in private companies, due to the fact that there is not a single entity that can make a decision.

The performance measurement system is the primary vehicle for observing, communicating and using performance metrics. Most of the people directly involved in this process are involved in the design, implementation, management, maintenance and use of the performance measurement system. A respectful management system ensures regular monitoring of measures to assess and improve performance, highlight responsibility and ensure pragmatic organizational decision-making.

CONCLUSION:

This article describes internal audit as being a key to success in the management of local authorities, we can advance that the effectiveness of internal audit is linked to several factors. namely the auditor, his competence, his independence, the collaboration between the services to carry out an audit mission, the level of management which represents the internal audit in the structure of the organization as well as its degree of measurement of performance within the organization. In this sense, performance measurement also allows different entities of a community assess their achievements of the main goals and learn how to achieve them more effectively with optimization the costs. However, further reflection in the future on performance indicators which are the keystone of performance measurement systems, thus the criteria conditioning the choice of these indicators will allow a better understanding of performance, its evaluation systems and the way they work.

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THE ANALYSIS OF FINANCIAL DISTRESS TOWARDS MSME OF TENUN IKAT IN EAST NUSA TENGGARA

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ABSTRACT

This research aimed to find out and to analyze the prediction of financial distress towards MSMEs of Tenun Ikat in East Nusa Tenggara.

Quantitative descriptive is the method used in this research to analyze the bankruptcy prediction by using Zmijewski method (X-Score).

The result shows that on average, MSMEs of Tenun Ikat in East Nusa Tenggara are predicted to not experienced financial difficulties. But partially, there are 5 MSMEs of Tenun Ikat in NTT which are predicted to not experience financial distress and there are 7 MSMEs of Tenun Ikat in NTT which are predicted to experience financial distress.

Key words : Return On Asset, Debt Ratio, Current Ratio dan Finansial Distress

INTRODUCTION

Micro Small Medium Enterprises (MSME) is a unit of stand-alone business managed by individuals or group. According to the information from the State Ministry of Cooperative and SMEs of the Republic of Indonesia, MSMEs give many contributions, such as MSME contributes to the creation of national investment, national Gross Domestic Product (GDP), national workforce, and national foreign exchange creation. Indonesia's MSMEs donate up to IDR 8.573,9 trillion to Indonesian GDP (on the basis of current prices) in 2018. Indonesian GDP in 2018 was around IDR 14.838,3 trillion, so MSMEs contributed up to 57,8% towards GDP. Other than that, MSMEs provide around 116.978.631 people or around 97% from the total of Indonesia's workforces (MSMEs and the Big Unit). Until this time, there are 64.194.057 units of Indonesia's MSMEs or 99,99% from the total of business unit in Indonesia. It shows MSMEs' performance is growing better from year to year. The good performance of MSMEs is something important in efforts to increase Indonesia's economic growth. For this reason, MSME managers are required to have more capabilities in managing MSME finances.

Some MSMEs do not have good financial reports, they only the recording of incoming and outgoing money is not well documented. Based on several previous interviews with MSMEs shows that financial reports are only made when applying for loans to banks or at the time of establishment of MSMEs as one of the requirements that must be met. This is due to the very limited ability and understanding of financial management.

This limited management capability will have an impact on MSMEs not being able to run well or experiencing failure. Business failure is usually marked by financial distress. According to Farida (2019), financial distress can be a cruel natural selection that will make the company eliminated from the market if the company is not able to control this so that the company enters into a state of default and goes bankrupt. But it can be something that benefits the company if it is managed properly, so that it becomes an alarm for problems that arise. In general, financial distress is a phenomenon that shows a declining trend in the financial performance of a company. Usually, financial distress remains the first step before the bankruptcy. Financial distress regularly involves at least 2 parties, debtors and creditors (Fadilah, 2019).

Financial distress phenomenon can be a matter of concern for the company. If the company is not able to understand the problem well, then it is not impossible that the condition will get worse. Factors that causing financial distress include poor business planning, cash flow problems, inadequate capital structure, and large nominal debt.

East Nusa Tenggara Province has 104,188 MSMEs, of which there are also Tenun Ikat MSMEs. NTT ikat is very famous. Each region in NTT has its own distinct style and uniqueness that stands out. The name 'Tenun Ikat' itself is the activity of making cloth by inserting the weft horizontally into the warp threads, usually having been tied first and dipped in natural dyes. The distribution of three types of weaving process in NTT can be seen as follows: 1) Tenun Ikat; its distribution is almost evenly distributed in all regencies in East Nusa Tenggara, except for Manggarai Regency and parts of Ngada Regency; 2) Tenun Buna; its distribution is in Kupang Regency, South Central Timor, Belu, and the most is in North Central Timor Regency; and 3) Tenun Lotis/Sotis or Ikat; it can be found in Kupang Regency or Kupang town, South Central Timor, North Central Timor, Belu, Alor, East Flores, Lembata, Sikka, Ngada, Manggarai, East Sumba, and Sumba. The manufacturing process

requires skilled workers to produce good woven fabrics. In addition, in terms of time it also takes quite a long time, which causes expensive price of cloth so that the sales turnover of tenun ikat cloth becomes slow. The government through the policy of the Governor of NTT which requires all ASN (national employees) to use original woven fabrics, not modifications every Tuesday and Friday, has encouraged the MSMEs of Tenun Ikat business to develop even better. Thus, it is hoped that the MSMEs of Tenun Ikat actors are able to manage and maintain their business sustainability well so that they do not experience financial difficulties and even bankruptcy. Based on the problems above, it is necessary to conduct research about “THE ANALYSIS OF FINANCIAL DISTRESS TOWARDS MSME OF TENUN IKAT IN EAST NUSA TENGGARA”.

REVIEW OF LITERATURE

Financial Distress

1. Definition of Financial Distress

Financial distress is a condition of a company that is illiquid but is still in a solvent state. According to Fahmi (2013) financial distress is a situation in which the company experiences financial difficulties prior to bankruptcy or liquidation. Financial distress indicates that the company's financial condition is in an unhealthy condition and is the main cause of company bankruptcy. According to Brigham dan Daves (2003) financial distress is a situation where the company is no longer able to pay its obligations on its payment schedule.

Financial distress can occur in various companies and can be a sign/signal of bankruptcy that the company may experience. If the company is in a state of financial distress, then management must be careful because it could enter the stage of bankruptcy. Management of companies experiencing financial distress must take action to overcome these financial problems and prevent bankruptcy. According to Hopwood (1994), financial distress occurs in three conditions, they are: (1) negative working capital of the year, (2) Operating loss in the three years before bankruptcy, and (3) negative retained earnings in the three years prior to bankruptcy.

2. Causes of Financial Distress

Financial distress can occur due to several factors. These causes can come from internal or external to the company. External analysis is carried out on data sourced from outside the company such as trade reports, statistics and economic indicators issued by the government or the private sector. Internal analysis is carried out through, among others, analysis of the company's strategy where this strategy focuses on the competition faced by the company, cost structure relative to competitors, management's ability to control costs, other management qualities.

According to Farida (2019) There are two factors that cause financial distress in companies, they are internal factors and external factors.

a. Internal Company

- Human resources. Poor quality and quantity of human resources.
- Products. Bad products and do not meet consumer expectations.
- Pricing. Unrealistic budgets and pricing.
- Technology. The company's inability to keep up with technological and environmental developments.
- Marketing. Inappropriate marketing activities that reduce company sales.
- Distribution. Poor distribution channels that make sales not as expected or the product is damaged, causing losses to the technology company.

b. External Company

- Socio-cultural. The company's inability to adapt to the socio-cultural environment in which the company operates can increase the company's reasons for failure.
- Economic conditions. For example, economic growth, inflation, new policies from regulators, both fiscal and monetary, and other macro factors that can trigger a company's financial difficulties.
- Technology. The presence of new technologies often makes it difficult for some companies to immediately adopt them, thus making them less competitive in the market.
- Legal. The laws governing quotas, exports, imports, trade are subject to penalty control if they are not followed. And all of them cause financial problems in the company.

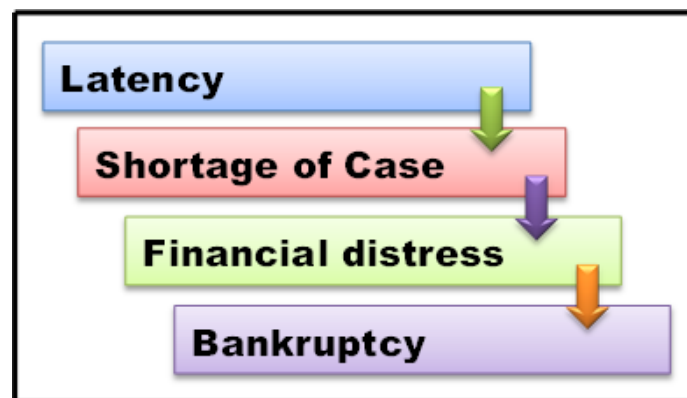
- Natural disasters. Events related to natural disasters are factors that cannot be fully controlled but can lead to business failure.

3. Bankruptcy

Rudianto (2013) said that bankruptcy of the company occurs because of a failure in the company. There are 3 types of failure in the company, they are:

1. Companies that are technically insolvent, if the company cannot fulfill its obligations that are due immediately but the value of the company's assets is higher than its debts.
2. Companies that are legally insolvent, if the value of the company's assets is lower than its debts.
3. Companies facing bankruptcy, that is, if they cannot pay their debts and are declared bankrupt by the court.

Bankruptcy can be caused by many factors. In some cases, the reason can be recognized after analysis of financial statements. But there are cases where the company is experiencing a decline, but some items in the financial statements show good short-term performance. (Kordestani et al., 2011). There are several companies that are going through stages of bankruptcy. But there are also those who do not experience the stages of bankruptcy.



Picture 1. The Stage of Bankruptcy

Source: Kordestani et al. (2011)

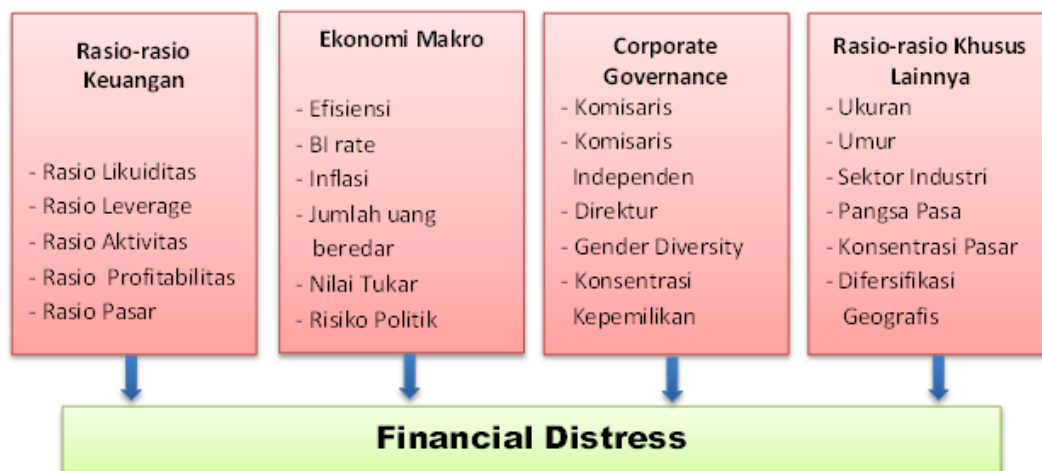
Benefits of Predicting Financial Distress

Many parties have an interest in information about the financial difficulties experienced by the company. For internal companies, this information will assist management in making improvements and anticipating bad things that will happen next. Meanwhile, external parties, namely creditors and investors, will provide a more in-depth picture of the company's ability to manage investments invested by these external parties. Hanafi (2009) states that, predicting financial distress of a company provides benefits for several parties, such as:

1. Lenders. Bankruptcy information can be useful for making decisions about who will be given a loan and then useful for monitoring policies on existing loans.
2. Investors. Stocks or bonds issued by a company will certainly be very interested in seeing the possibility of bankruptcy (distress) or not the company that sells the securities. Active investors will develop financial distress prediction models to see signs of bankruptcy as early as possible and then anticipate these possibilities.
3. The Government. For some business sectors, the government has the responsibility to oversee the running of the business (e.g. the banking sector and BUMN). The government has an interest in watching for signs of bankruptcy
4. Accountants or auditors. Accountants have an interest in information on the continuity of a business because the accountant will assess the going concern ability of a company.
5. Management. If the company goes bankrupt, the company will bear direct costs (accountants and lawyers fees) and indirect costs (sales losses or coercive losses due to court decisions). So that the existence of a financial distress prediction model is expected that the company can avoid bankruptcy and can automatically avoid the direct and indirect costs of bankruptcy.

Financial Distress Prediction

Financial distress prediction according to Farida (2019) can be divided into four parts as can be seen in the following picture.



Picture 2. Predictor of Financial Distres

Source : Farida, 2019

Financial Ratios in Predicting Financial Distress

1. Liquidity Ratio

Liquidity is a ratio used to measure how liquid a company is. The liquidity ratio can be obtained through sources of information regarding working capital, namely items that are in current assets and items that are in current debt (Harahap, 2013). According to Farida (2019), a company is said to be liquid is a company that is able to utilize its current assets to create high profits. The ratios that are often used to predict financial distress are the current ratio, quick ratio and working capital ratio. Current ratio is a ratio that measures the company's ability to meet its short-term obligations with current assets. Because of the current ratio which is faster to convert in monetary units, it is expected that the short-term debt can be paid with the amount of current assets. Therefore, the amount of current assets must be greater than the number of current liabilities. To be able to pay off the company's short-term debt, the company's current ratio must be high. On the other hand, if it turns out that the company has low current assets (assets must be smaller than the total current liabilities), it is feared that the company will have difficulty paying its short-term debt. This can trigger financial distress.

2. Leverage Ratio

Leverage is used to determine the company's ability to pay off all of its debts, in other words, this ratio can also be used to find out how the company finances its business activities, whether it uses debt or own capital. According to Kasmir (2014), if a finance company uses more debt, it is at risk that there will be difficulties in payment in the future due to debt that is greater than the results owned. If this situation cannot be handled properly, the potential for financial distress will be even greater. Bankruptcy usually begins with a moment of default, this is because the greater the amount of debt, the higher the probability of financial distress.

Syahyunan (2013) states that the classification of the leverage ratio, one of which is the debt ratio. Debt ratio is a measure of the amount of company assets financed by debt or capital originating from creditors. This ratio compares the total amount of debt with total assets owned by the company. Usually, creditors prefer the debt ratio of companies that are given credit, the greater the level of security obtained by creditors in liquidity.

3. Activity Ratio

According to Farida (2019), the activities carried out by the company will reflect how efficiently the company uses its assets to generate revenue. The ratios that are often used are asset turnover, working capital turnover, inventory turnover.

4. Rasio Profitabilitas

According to Hanafi (2009), profitability describes the company's ability to generate net income based on certain asset levels. The greater the level of assets, the net profit generated by a company must also be greater, so that the lower the ROA (Return on Assets) of a company, the possibility of the company experiencing financial distress is high. Meanwhile, according to (Hapsari, 2012) states that the more the company loses, the

higher the potential for the company to experience financial distress. This means that the lower the profitability of the company, the greater the possibility that the company will experience financial distress. According to Farida (2019), there are several profitability ratios that are often used to predict financial distress, including the net profit ratio (ROA), the net profit ratio compared to own capital (ROE), or the company's operating profit (earnings before interest and tax, EBIT).

5. Market Ratio

Market ratios reflect how the market assesses the company's performance. The indicator used is price book value (PBV). The smaller the PBV value, the better the market assesses the company's performance. The better the market appraisal, the more likely the company is to avoid financial distress (Farida, 2019).

In this study, the ratios used are liquidity ratios, leverage ratios, profitability ratios because the object of this research is MSMEs of Tenun Ikat.

Financial Distress Analysis Model

There are various models to analyze the potential for bankruptcy, including the Altman Z-score model, the Zmijewski model and the Springate model. In this study using the Zmijewski model.

Zmijewski (X-score)

The Zmijewski model is a probit model which is an alternative to regression analysis that uses a cumulative normal probability distribution. Zmijewski's probit analysis uses financial ratios that measure the performance of Return on Assets (ROA), Leverage, and Liquidity to predict the company's financial difficulties.

The prediction model produced by Zmijewski in 1983 is 20 years of repeated research. In 1984 Zmijewski used liquidity ratio analysis, leverage, and measuring the performance of a company. Zmijewski predicts with a sample of 75 bankrupt companies and 73 healthy companies during 1972 to 1978, the F-Test indicator on the ratio of the rate of return, liquidity, leverage turnover, fixed payment coverage, trend, firm size, and stock return volatility, shows significant difference between healthy and unhealthy companies. Then this model produces the following formula:

Where :

$$X = -4,3 - 4,5X_1 + 5,7X_2 + 0,004X_3$$

X_1 = ROA (Return on Asset)

X_2 = Leverage (Debt Ratio)

X_3 = Likuiditas (Current Ratio)

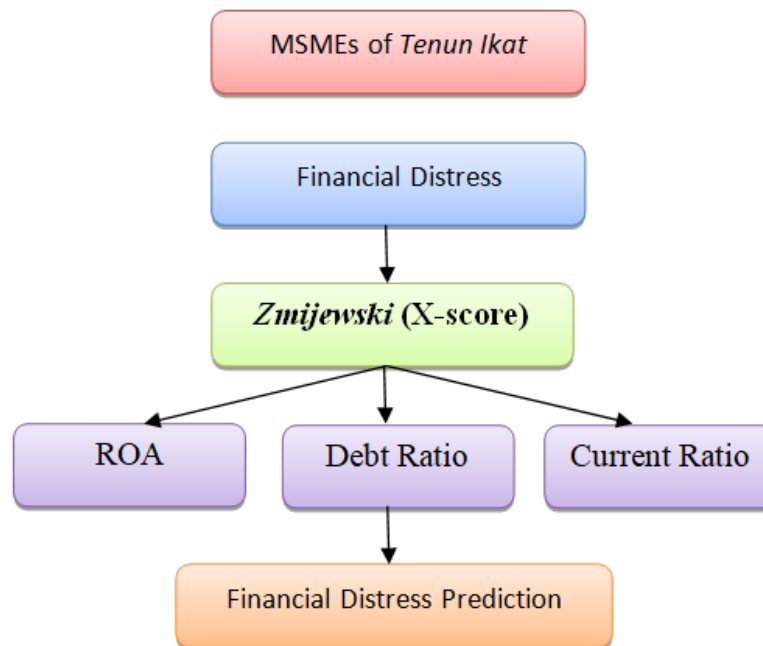
Zmijewski proposes a cut-off value for calculations in the Zmijewski method, as follows:

A. $X > 0$ (positive), based on the calculation results obtained, if the company that has the score has a value that the company is said to be in the category of companies that have financial difficulties and lead to bankruptcy.

B. $X < 0$ (negative), based on the calculation results obtained, if the company that has the score has a value that the company is included in the category of a healthy company and does not have problems in financial difficulties.

In this study, using the application of the Zmijewski (X-Score) model for the MSME sector, especially Tenun Ikat.

Framework of Thinking



RESEARCH METHODOLOGY

Types of Research

Quantitative descriptive research is research that aims to describe systematically, factually, and accurately about a situation, state or field of study that is the object of research by using quantitative data (data in the form of numbers or data that is numbered).

Time and Place of Research

The location of this research is in 4 locations, namely in the City of Kupang, TTS, TTU and Belu, the Tenun Ikat MSME actors. While the time of research starts in July to October 2021

Sample

The sample in this study were 12 MSMEs. This is because not all MSMEs are willing to be interviewed and provide information, especially regarding finances.

Definisi Operasional Variabel

1. Profitability ratios are used to determine the company's ability to generate profits or how effective the management of the company is. This ratio is proxied by Return on Assets (ROA) with the following formula:

$$\text{Return On Asset} = \frac{\text{Net income}}{\text{Total asset}} \times 100$$

1. The leverage ratio is used to determine the company's ability to pay off all of its debts or in other words this ratio can also be used to find out how the company finances its business activities whether it uses debt or equity.

This ratio is proxied by the debt ratio with the following formula:

$$\text{Debt ratio} = \frac{\text{Total liabilities}}{\text{Total assets}} \times 100$$

2. Liquidity

The liquidity ratio is the ratio used to determine the company's ability to meet its short-term obligations in a timely manner. This ratio is proxied by the current ratio with the following formula:

$$\text{Current ratio} = \frac{\text{current assets}}{\text{current liabilities}} \times 100$$

3. Financial distress is used to measure the level of bankruptcy of a company. The formula used is the Zmijewski Model

$$X = -4,3 - 4,5X1 + 5,7X2 + 0,004X3$$

The results of the Zmijewski value obtained will be analyzed further using standard cut-off values with the following criteria:

- $X > 0$ (positive), if a company that has a value > 0 then the company is said to be in the category of companies that have financial difficulties and lead to bankruptcy.
- $X < 0$ (negative), if a company that has a value < 0 then the company is said to be in the category of a healthy company and does not have problems in financial difficulties.

RESULT AND DISCUSSION

The results of the calculation of ROA, Debt ratio and Current ratio can be seen in the following table:

Table 1. Result of calculation of ROA, DR and CR

| MSME | ROA | Debt Ratio | Current Ratio |
|-----------------|---------------|---------------|----------------|
| | X1 | X2 | X3 |
| Deswar Manafe | 41.54 | 27.69 | 300.00 |
| Nana Rohi | 38.00 | 22.00 | 300.00 |
| Adel Wila | 50.22 | 23.11 | 250.00 |
| Maria Nubatonis | 40.24 | 28.05 | 230.00 |
| Susan Selan | 33.75 | 16.25 | 500.00 |
| Rando Rubun | 8.00 | 60.89 | 156.00 |
| Erma Naimau | 15.50 | 74.50 | 120.00 |
| Mirna Uskono | 29.71 | 27.43 | 400.00 |
| Yofita Naikofi | 12.79 | 37.21 | 440.00 |
| Margareta Settu | 32.67 | 37.89 | 179.10 |
| Vicky Simonis | 44.56 | 39.52 | 141.67 |
| Kristianus Tobe | 23.48 | 48.26 | 186.67 |
| Total | 370.47 | 442.79 | 3203.44 |
| Average | 30.87 | 0.37 | 2.67 |

Source: Data processed 2021

1. Return On Asset (X1)

This ratio compares net income before interest and taxes to total assets. Net income before interest and taxes is obtained from the income statement and total assets are obtained from the company's balance sheet. Based on table 1 above, it can be seen that the average ROA of *Tenun Ikat* MSMEs is still too small, this means that the *Tenun Ikat* MSMEs on average have not been effective in managing their profits.

2. Debt Ratio (X2)

This ratio is a ratio that compares total debt with total assets. This ratio is used to measure the company's total liquidity. All data is obtained from the balance sheet of the company.

According to Fahmia (2015: 72), the use of debt that is too high will harm the company because the company will fall into the category of extreme leverage, namely the company is trapped in a high level of debt and it is difficult to release the debt burden. Based on table 1 above, it can be seen that the level of debt ratio owned by *Tenun Ikat* SMEs is also small. This is because most of the *Tenun Ikat* SMEs are not too dependent on loans (debt) in running their business. In fact, most MSMEs only rely on their own capital to run their business.

3. Current Ratio (X3)

This ratio is measured by comparing current assets with current liabilities. This ratio is to measure the company's liquidity in the short term.

Based on table 1 above, the average level of the MSME current ratio is very small. This indicates something very positive. The reason is because most of the *Tenun Ikat* MSMEs have a greater asset value than their debt.

4. Financial Distress

After the results of the calculation of ROA, Debt ratio and Current ratio are obtained, these results are entered into the Zmijewski formula to find out whether the MSMEs of *Tenun Ikat* experience bankruptcy or not with the formula:

$$X = -4,3 - 4,5X_1 + 5,7X_2 + 0,004X_3$$

$$= -4,3 - 4,5(30.87) + 5,7(0.37) + 0,004(2.67)$$

$$= -141.02$$

From the results obtained, it can be concluded that the Zmijewski value for the entire MSMEs of *Tenun Ikat* is at the cut-off standard $X < 0$ which means that on average *Tenun Ikat* MSMEs do not experience financial difficulties, which means they have no potential for bankruptcy. However, the calculation results for each of *Tenun Ikat* MSME can be seen in the following table:

Table 2. Financial Distress Calculation Results

| MSME | Financial Distress | Description |
|-----------------|--------------------|--------------|
| Deswar Manafe | -31.62 | Non bankrupt |
| Nana Rohi | -48.26 | Non bankrupt |
| Adel Wila | -97.10 | Non bankrupt |
| Maria Nubatonis | -24.04 | Non bankrupt |
| Susan Selan | -61.23 | Non bankrupt |
| Rando Rubun | 308.61 | Bankrupt |
| Erma Naimau | 352.57 | Bankrupt |
| Mirna Uskono | 20.48 | Bankrupt |
| Yofita Naikofi | 152.70 | Bankrupt |
| Margareta Settu | 66.14 | Bankrupt |
| Vicky Simonis | 21.78 | Bankrupt |
| Kristianus Tobe | 166.85 | Bankrupt |

Source : Data Processed 2021

Based on table 2 above, there are partially 5 Ikat Weaving SMEs that did not go bankrupt, there are 7 Ikat Weaving SMEs that went bankrupt. This is because the debt ratio tends to be high and the current ratio tends to be low.

According to Hanafi (2016: 637), financial distress is a continuum condition ranging from mild financial difficulties (such as liquidity problems), to more serious financial difficulties, which are not solvable (debt is greater than assets). In this condition, the company can practically be said to have gone bankrupt. Between the two extremes in the chart below, there are still milder business difficulties than bankruptcy.

In general, there are 4 categories of classification of financial distress that we can make, namely:

- First, *Financial distress* category A or very high and really dangerous. This category allows companies to be declared bankrupt or insolvent. This category allows the company to report to related parties such as the court that the company is in a bankrupt position and submit various matters to be handled by parties outside the company.
- Second, *Financial distress* category B or high and is considered dangerous. In this position the company must think of various realistic solutions in saving the various assets it owns, such as the sources of assets that it wants to sell and not sell/maintain. Including thinking about the various impacts if the merger and acquisition decisions are implemented. One of the most obvious impacts seen in this position is that the company began to lay off and retire some of its employees who were deemed unfit to be retained.
- Third, *Financial distress* category C or moderate and this is considered the company is still able/able to save itself by additional measures of funds sourced from internal and external. However, here the company

has to revamp various policies and management concepts that have been implemented so far, even if it is necessary to recruit new experts who have high potential to be placed in strategic positions in charge of controlling and saving the company, including targets in boosting earnings. return profit..

- d. Fourth, *Financial distress* category D or low. In this category, the company is considered only experiencing temporary financial fluctuations caused by various external and internal conditions, including the birth and implementation of decisions that are not so precise. And these are generally short-term in nature, so that this condition can be quickly addressed, such as by issuing financial reserves that are owned, or taking from sources of funds that have been allocated to overcome these problems..

CONCLUSION

Based on the results of the research that has been carried out, it can be concluded that there are 5 MSMEs of *Tenun Ikat* in NTT that are predicted to have no financial difficulties and there are 7 MSMEs of *Tenun Ikat* in NTT that are predicted to experience financial difficulties.

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CATTLE INSURANCE AND MANAGEMENT IN INDIAN SOCIETY

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ABSTRACT

It is believed that "rural India is real India". So we need to contemplate for the development of rural areas to witness the growth of our country. Apart from farming Indian agriculture sector has the most important subsector of animal production. This area also provides social protection and employment instead of income generation. The science of caring, breeding and management of livestock is called animal husbandry. Dairy farming is a class of animal husbandry for long-term production of milk, which is further preserved and processed for production of varieties of dairy products. Cattle herders have to take a lot of difficulties related to breeding, raising, day to day caring, arrangement of their proper feeding, and prevention against different diseases. Cattle insurance covers death of cattle due to fire, natural perils, riot, strike, accident or diseases during the policy period subject to the terms, conditions, provisions, warranties, endorsements, exceptions and exclusions of the policy. The insurance coverage may be extended to the personal accident coverage of the farmers / herders as they are prone to different accidental hazards due to their working culture.

Keywords: Veterinary doctor, vaccination, livestock, permanent total disablement, ear tag, misrepresentation, subsidized premium rate, fodder.

INTRODUCTION:

India has vast livestock resources. This sector contributes about 4% GDP. Cattle farming are one of the primary occupations among the rural community in our country. This is a labour intensive industry in India with employment generation of about 9% of total population. Department of Animal Husbandry, Dairying & Fisheries, Govt. of India implements various centrally sponsored schemes for Cattle. The word "Cattle" means i) cows ii) buffaloes iii) calves/heifers iii) stud bulls iv) bullocks. Animal Resources Development Department in West Bengal play a major role in supplementing family income and generating gainful employment in the rural areas among landless labourers, small and marginal farmers by livestock farming. Here we are talking about small scale cattle farming in rural India where the extent of insurance coverage is very less. The purpose of cattle insurance is to indemnify the beneficiaries against death or permanent total disablement of cattle due to accident or diseases during the policy period. In our patriarchal society maximum women from poor rural households involve themselves in taking care of livestock by challenging their poor health, illiteracy, domestic violence to make it an income generating activity to support their families. Children may be abstained from taking care of animals as this will hinder them to pursue their education.

India is the largest producer of milk in the world. States with highest milk production during 2019-20

| Name of State | Amount in million metric tons |
|----------------|-------------------------------|
| Uttar Pradesh | 30.52 |
| Rajasthan | 23.67 |
| Madhya Pradesh | 15.91 |
| Andhra Pradesh | 15.04 |
| Gujarat | 14.49 |
| Punjab | 12.6 |
| Maharashtra | 11.66 |
| Haryana | 10.73 |
| Bihar | 9.82 |
| Tamil Nadu | 8.36 |
| Karnataka | 7.9 |
| West Bengal | 5.61 |
| Telangana | 5.42 |
| Kerala | 2.55 |

Care and maintenance:

- (i) Adequate fresh water should be given for drinking.
- (ii) Provide good quality green fodder sufficiently.
- (iii) Keep the body of the cattle clean and dry to avoid any infection.
- (iv) The cattle should be housed in warm and clean condition with sufficient space.
- (v) Take extra care during calving.
- (vi) Protect them from other harmful animals, insects and pests.
- (vii) Follow the instructions of Veterinary doctor.
- (viii) All reasonable care of the animal should be taken and in the event of an illness or accident the services of a qualified Veterinary doctor shall be obtained.
- (ix) Necessary vaccination of the animal is to be provided on schedule as per the instructions from Animal Husbandry.
- (x) Authorised representatives from Animal husbandry or insurance department should be permitted to inspect the animal.

Challenges:

- (i) Lack of awareness
- (ii) Lack of financial support
- (iii) Corruption
- (iv) Unpredictable weather, specially humidity
- (v) Lack of technical support
- (vi) Lack of skilled personnel

Initiatives from Government:

National Livestock Mission (NLM) launched as a sub scheme of White Revolution in financial year 2014-15 seeks to ensure quantitative and qualitative improvement in livestock.

Government of India is making efforts for strengthening infrastructure for production of quality milk, procurement, processing and marketing of milk and milk products through following Dairy Development Schemes:

- i) National Programme for Dairy Development(NPDD)
- ii) National Dairy Plan
- iii) Dairy Entrepreneurship Development Scheme(DEDs)
- iv) Support to Dairy Cooperatives
- v) Dairy Processing and Infrastructure Development Fund (DIDF)

About cattle insurance policy:

The policy may be issued on long term basis (more than one year) or in group. Long term discount or group discount is provided after fulfilling certain criteria.

The insured animal should be identified first by ear tag. The tagging process is done in presence of a veterinary doctor and representatives from the company. In respect of any claim ear tag is must.

Misrepresentation or non disclosure of material facts makes the policy voidable.

The basis of the sum insured is only market value which further may be ascertained through qualified veterinary doctor. The premium depends on the sum insured. Special discounts may be provided after confirming satisfactory atmosphere of the premises where the cattle are kept. Government aided scheme animals are provided with subsidized premium rate.

The policy may be cancelled at any time after the request of insured. At the same way the insurance company may also cancel the policy on account of fraud, non-disclosure of material facts or non-cooperation of the

Insured after serving 15 days notice. The premium may be refunded on short scale and pro-rata basis respectively.

Exclusions:

This Policy generally follows the following exclusions:

1. Malicious activities.
2. Use of the animal unprofessional, illegal way.
3. Disease contracted prior to commencement of risk or contracted within 15 days from the date of commencement of the risk.
4. Intentional slaughter
5. Consequential loss
6. Theft or clandestine sale of the animal.
7. Transport of animal by air/sea.
8. War/nuclear perils

Claim process:

In the event of claim, an early intimation to the nearest insurance office is necessary. Investigator will be deputed from the insurer. Generally the following documents are necessary: policy copy, duly filled claim form, post mortem report, photographs, intact ear tag and any other relevant document, if necessary. The Company is not liable for any loss or damage after the expiry of 12 months from the happening of the loss or damage.

CONCLUSION:

This is a field based project activity. Now a days different non government organizations, members of Indian Council of Social Science and Research and women self help groups at regional level are taking interest in livestock farming and insurance. Local groups may approach similar projects by United Nations Development Programme to avail quality fodder for the livestock in drought prone rural areas. International assistance from World Bank, International Monetary Fund and European Union makes the project acclaimed beyond regional boundaries. With the enrichment of the concept of livestock the need for insurance will be raised. Some challenges in livestock needs to be overcome. The productivity level should be increased with the use of technology, infrastructure, credit and training. FAO aims to strengthen livestock department by providing productive and decent employment opportunities for rural communities particularly youth and women. Different government and non government agencies should promote various schemes free of cost or minimum cost to strengthen the livestock sector especially for rural areas. Farmers should be encouraged to adopt cattle insurance. Central Government sponsored livestock insurance scheme should be promoted and implemented widely in all the districts of the country for the benefit of farmers.

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CLASSIFICATION AND LOCALIZATION OF COVID-19 DETECTION IN CT AND X-RAY IMAGES USING MAX VOTING-BASED ENSEMBLE LEARNING

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ABSTRACT

Artificial Intelligence technology is employed in Deep Learning to identify covid-19 traits in CT images and efficiently screen COVID-19 patients. It also achieves rapid diversion and treatment of suspected patients, as well as a reduction in infection risk and disease control. To analyse the CT scans of COVID-19 patients, the suggested work integrates deep learning target detection and image classification algorithms. By extracting and analysing the features of lesions in different periods, a new detection model of covid-19 based on time-spatial sequence convolution is obtained. The algorithm is based on a convolutional neural network structure. The convolution neural network based on time and space attributes can effectively extract the latent image semantic features of multiple image data of COVID-19 patients. By comparing with the ResNet algorithm, the detection method proposed obtains more accurate comprehensive detection results. EfficientNet, a convolutional neural network, completes the automatic detection of COVID-19 quickly and improves the efficiency of preliminary diagnosis. Voting ensemble is a machine learning model that integrates predictions from a number of different models. It is a technique for improving model performance, with the goal of achieving better results than any single model in the ensemble. More accurate auxiliary preliminary screening results were obtained by correlating images from different stages of the same patient.

Keywords: image classification, deep learning, Voting ensemble, feature extraction, time-spatial sequence convolution

1. INTRODUCTION

Deep learning refers to a subset of machine learning methods that include numerous layers of nonlinear processing units. Each level develops the ability to turn its incoming data into a more abstract and composite representation. Other machine learning methods have been outperformed by deep neural networks. In some sectors, they also accomplished the first superhuman pattern recognition. This is bolstered by the fact that deep learning is regarded as a critical step toward achieving powerful AI. Second, deep neural networks, particularly convolutional neural networks, have been shown to provide excellent performance in image recognition. Convolutional neural networks will be used to generate outcomes in the domain of image recognition and detection. YOLOV5 is utilised in deep learning for accurately spotting animals, while CNN is used to filter the images.

Convolutional Neural Networks (CNN) are frequently constructed with a limited resource budget and then scaled up for improved accuracy as more resources become available. Model scaling is methodically investigated in this research while balancing network depth, width, and resolution. Based on this finding, a new scaling method was proposed that uses a simple and very effective compound coefficient to uniformly scale depth/width/resolution dimensions. This method's usefulness in scaling up MobileNet and ResNet was investigated.

As demonstrated in Figure 1, neural architecture is used to create a new baseline network and scale it up to produce the EfficientNet family of models. EfficientNet-B7, in instance, achieves state-of-the-art top-1 accuracy of 84.3 percent on ImageNet while being 8.4x smaller and 6.1x faster on inference than the best existing models. On the CIFAR-100 (91.7%), Flowers (98.8%), and three other transfer learning datasets, EfficientNet likewise transfers well and achieves state-of-the-art accuracy, with an order of magnitude difference on fewer parameters.

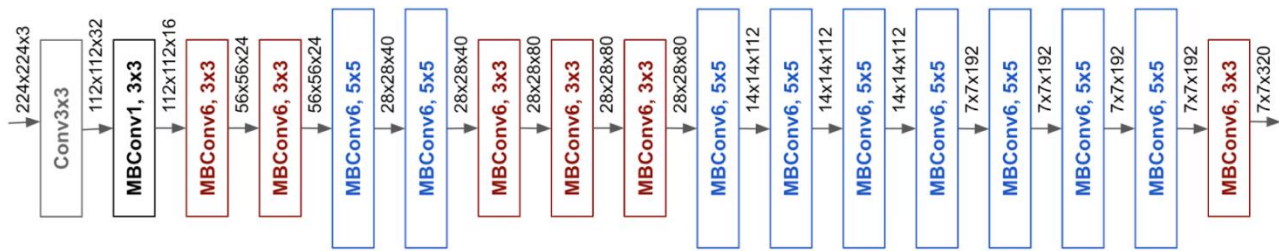


Figure 1. Architecture of EfficientNet

The goal is to use the EfficientNet and ResNet algorithms to detect and classify the covid-19 illness. By recognising the covid-19 in real time, the system is able to reduce the amount of manual labour required. The use of EfficientNet and ResNet algorithms to detect and classify covid-19 improves accuracy and efficiency.

2. LITERATURE REVIEW

Liu et al. [1] propose a two-dimensional sparse matrix profile DenseNet for COVID-19 Diagnosis Using Chest CT Images. The accuracy of the spatial semantic convolutional layer, which is based on a recurrent neural network structure and a 2D convolutional layer structure, is 94 percent when compared to RCNN's 92 percent. For more discriminative learning, use Prior-Attention residual learning.

Wang et al. [2] introduced COVID-19 screening in CT images, which uses the ResNet CNN architecture and achieves an accuracy of 89 percent. Fan et al. [3] developed Automatic COVID-19 Lung Infection Segmentation from CT Images, which used the Lung Infection Segmentation Network (Inf-Net) and achieved an accuracy of 87 percent. Detection of COVID-19 Sevi et al. [4] propose using deep learning methods, in which a deep convolutional neural network technique is applied and accuracy of 90.1 percent is reached.

The approaches outlined above have a lower level of precision. A deep learning-based architecture for the identification and categorization of covid-19 is proposed in order to improve further. This technique relies on learning both local and global information to classify the covid-19. The EfficientNet and ResNet architectures are utilised to detect the covid-19 in order to improve disease detection accuracy. The Reverse Transcription-Polymerase Chain Reaction test is commonly used to identify covid-19. In rare circumstances, pictures from a chest X-ray and a lung CT scan are used to manually detect covid. Deep learning is used to avoid manual errors in the detection of covid. Other techniques, such as Resnet CNN architecture, which has an accuracy of 89 percent, use alternative CNN architectures to detect the covid impacted images.

The coronavirus (COVID-2019) spread swiftly over the world and eventually became a pandemic. It is critical to identify covid-19 positive cases as soon as possible in order to prevent the epidemic from spreading further and to treat patients as quickly as possible. Covid19 is diagnosed via a reverse transcription-polymerase chain reaction assay. However, the test's results take a long time to get back. Deep learning has been used in a number of research to automate the detection of illness from lung CT scan pictures.

3. PROPOSED SYSTEM

EfficientNet looks to be the most promising of all the techniques described in the literature for detecting covid-19. EfficientNet improves accuracy while increasing efficiency. EfficientNet is taken because it provides an effective compound scaling method for boosting dataset image quality and gives greater accuracy. Although EfficientNet offers higher accuracy and efficiency, it suffers from a vanishing gradient problem induced by the training of multiple layers in the dataset.

CNN is a convolutional neural network with one or more convolutional layers that is mostly used for image processing, classification, segmentation, and other auto-correlated data. Convolution is the process of sliding a filter over an input signal. Convolutional kernels are a set of filters found in each convolutional layer. The filter is an integer matrix that is applied to a subset of the input pixel values that are the same size as the kernel. Each pixel is multiplied by the kernel's corresponding value, and the result is summed for a single value in the output channel/feature map that represents a grid cell, similar to a pixel. As demonstrated in Figure 2, an image classification algorithm is employed to detect the covid-19.

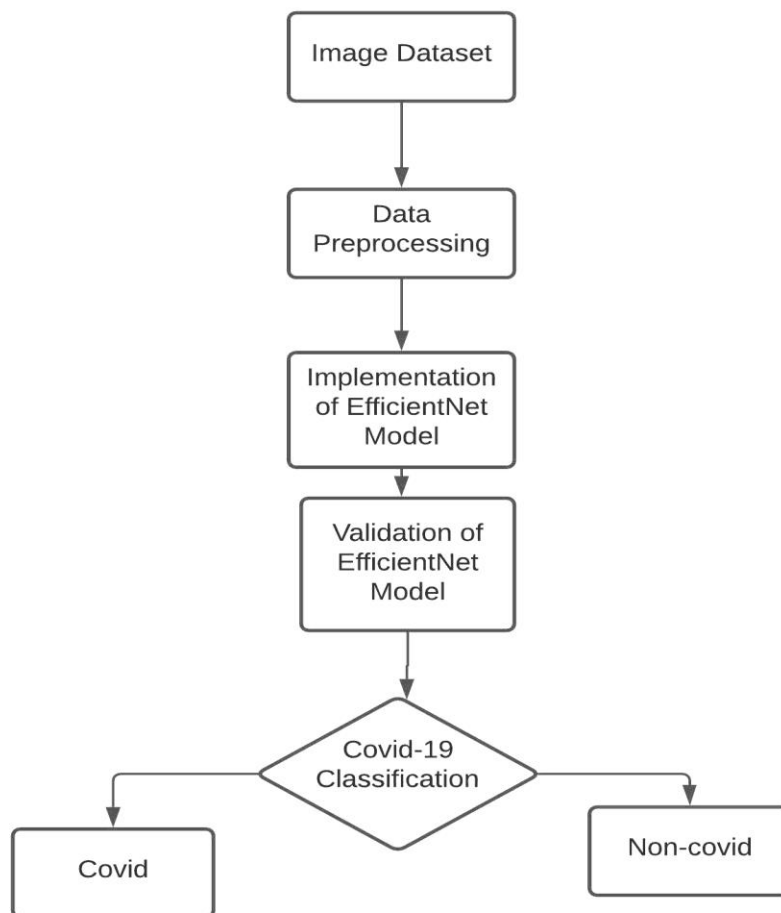


Figure 2. Proposed System

3.1 MODULE DESCRIPTION

The proposed system is a simple and efficient one to detect covid-19 is positive or not using lung CT-scan images. The system has three modules which includes,

- Data preprocessing
- Implementation of EfficientNetB3
- Prediction of covid-19 using EfficientNetB3

3.1.1 DATA PREPROCESSING

The goal of pre-processing is to improve image data by suppressing unwanted distortions or enhancing particular visual properties that are important for subsequent processing and analysis. Image pre-processing is used to improve the image's characteristics. This covers resizing, orienting, and colour corrections, among other things. The image data is transformed into a format that machine learning algorithms can understand. The following steps are included in image preprocessing:

- Consider the image files (stored in the data folder).
- Decode the JPEG data into RGB pixel grids with channels.
- Rescale the pixel values (between 0 and 255) to the [0, 1] interval before converting them to floating-point tensors for neural net input (training neural networks with this range will be efficient).

3.1.2 IMPLEMENTATION OF EFFICIENTNETB3

As shown in Figure 3, EfficientNetB3 is a CNN in which input images are categorised directly after the convolution and max pooling layers by a fully connected layer. In a completely connected layer, neurons have connections to all activations in the previous layer, much like in a traditional neural network. In EfficientNet-B0, there are 237 layers total, however in EfficientNet-B7, there are 813.

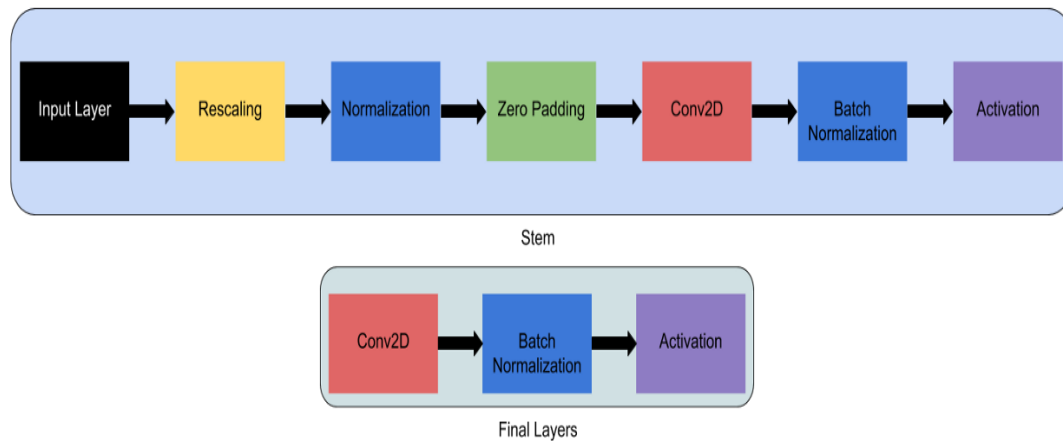


Figure 3. Layers in EfficientNet

1) Input layer

The input layer in CNN represents the pixel matrix of the image.

2) Rescaling

The depth, breadth, and resolution of a CNN are the three scaling dimensions. The number of layers in a network is comparable to the depth of the network. The term "width" refers to the network's size. The number of channels in a Convolutional layer, for example, is one measure of width, whereas resolution is the picture resolution given to a CNN, as seen in Figure 4.

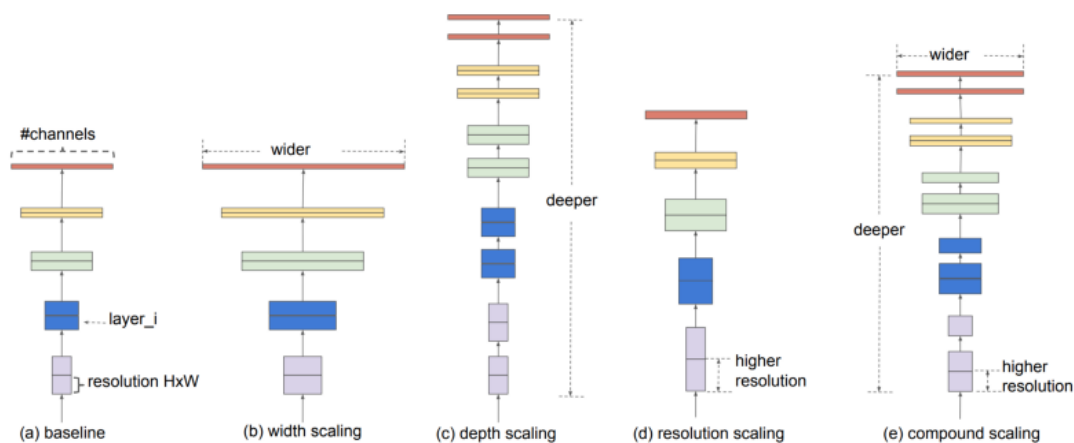


Figure 4. Rescaling methods

3) Normalization

Batch normalisation is a network layer that allows each layer to learn more independently. It's used to make the output of the previous layers more normal. In normalisation, the activations scale the input layer. Learning becomes more efficient when batch normalisation is utilised, and it can also be used as a regularisation to prevent model overfitting. To standardise the inputs or outputs, the layer is added to the sequential model. It can be utilised at numerous points within the model's layers.

4) Zero Padding

Zero-padding has no effect on the classification accuracy but considerably reduces the training time. The reason is that neighbouring zero input units (pixels) will not activate their corresponding convolutional unit in the next layer. It is a generic way to

(1) control the shrinkage of dimension after applying filters larger than 1x1 and

(2) avoid losing information at the boundaries.

5) Conv2D

In a conv2D layer, a filter or kernel has height and width that are often less than the input image, and they move across the entire image. Conv2D is a 2D Convolution Layer that helps to construct a tensor of outputs by creating a convolution kernel wind using layers input. Each convolution layer is made up of a number of filters,

such as 32, 64, 128, 256, 512, and so on. This is the same as the number of channels in a convolutional layer's output.

6) Activation

The activation function is a node which is placed at the end of or in between Neural Networks and help to decide if the neuron would fire or not.

7) ReLU Activation Function:

ReLU stands for rectified linear unit and is a type of activation function. Mathematically, it is defined as, $y = \max(0, x)$ as shown in figure 5.

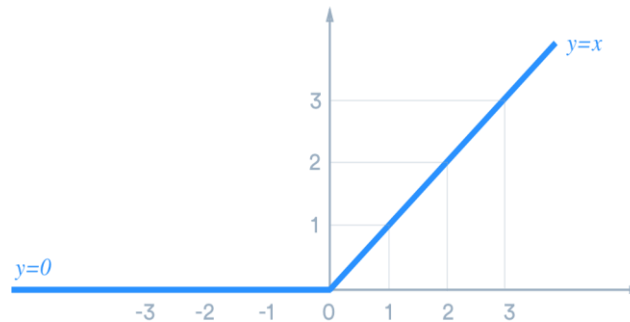


Figure 5. ReLU Activation Function

8) Softmax Function

The softmax function, often called softargmax [1]: 184 or normalised exponential function [2]: 198, is a multidimensional version of the logistic function. It is commonly employed as the last activation function of a neural network to normalise the output of a network to a probability distribution over projected output classes based on Luce's choice axiom in multinomial logistic regression.

The softmax function, as shown in equation 1, takes a vector z of K real numbers as input and normalises it into a probability distribution with K probabilities proportional to the input numbers' exponentials. Some vector components may be negative or greater than one before applying softmax, and they may not total to one. However, after applying softmax, each component will be in the interval $[0, 1]$, the components will add up to 1, and the probabilities will be interpreted. In addition, larger input components will result in higher probabilities.

$$\sigma(\vec{z})_i = \frac{e^{z_i}}{\sum_{j=1}^K e^{z_j}} \quad (1)$$

where,

σ =softmax

\vec{z} =input vector

e^{z_i} =standard exponential function for input vector

K =number of classes in the multi-class classifier

e^{z_j} =standard exponential function for output vector

3.1.3 PREDICTION OF COVID 19

After successful preprocessing and training, comparison of the test image and trained model takes place to predict the disease and hence the accuracy and other performance parameters of the disease are calculated.

4. RESULTS AND DISCUSSION:

The confusion matrix of EfficientNetB3 model is shown in Figure 6.

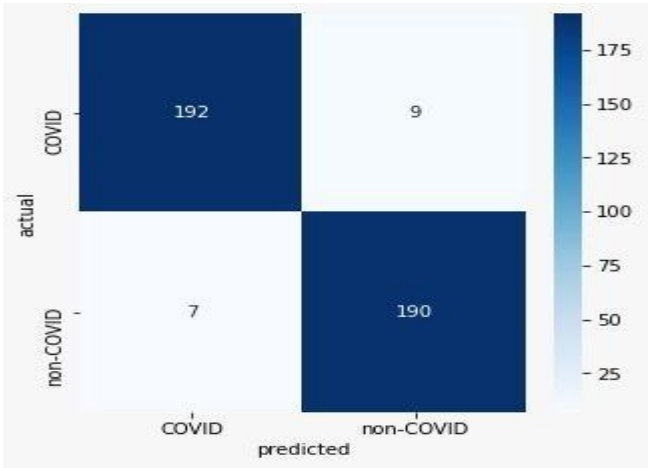


Figure 6. Confusion Matrix of EfficientNetB3

The confusion matrix of ResNet model is shown in Figure 7.

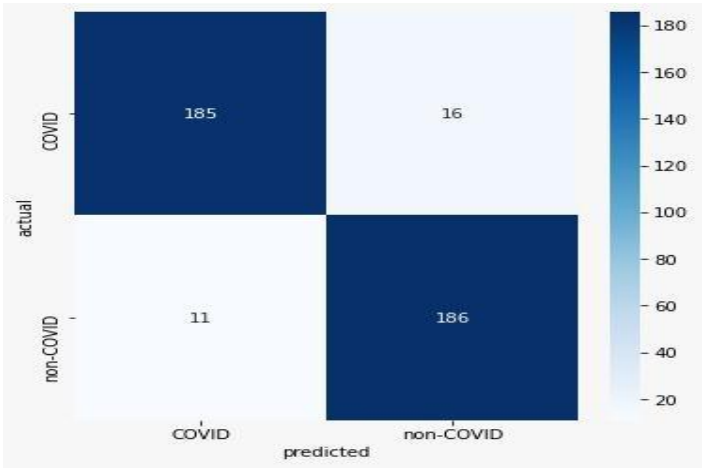


Figure 7. Confusion Matrix of ResNet

The covid and non-covid images are shown in Figure 8.

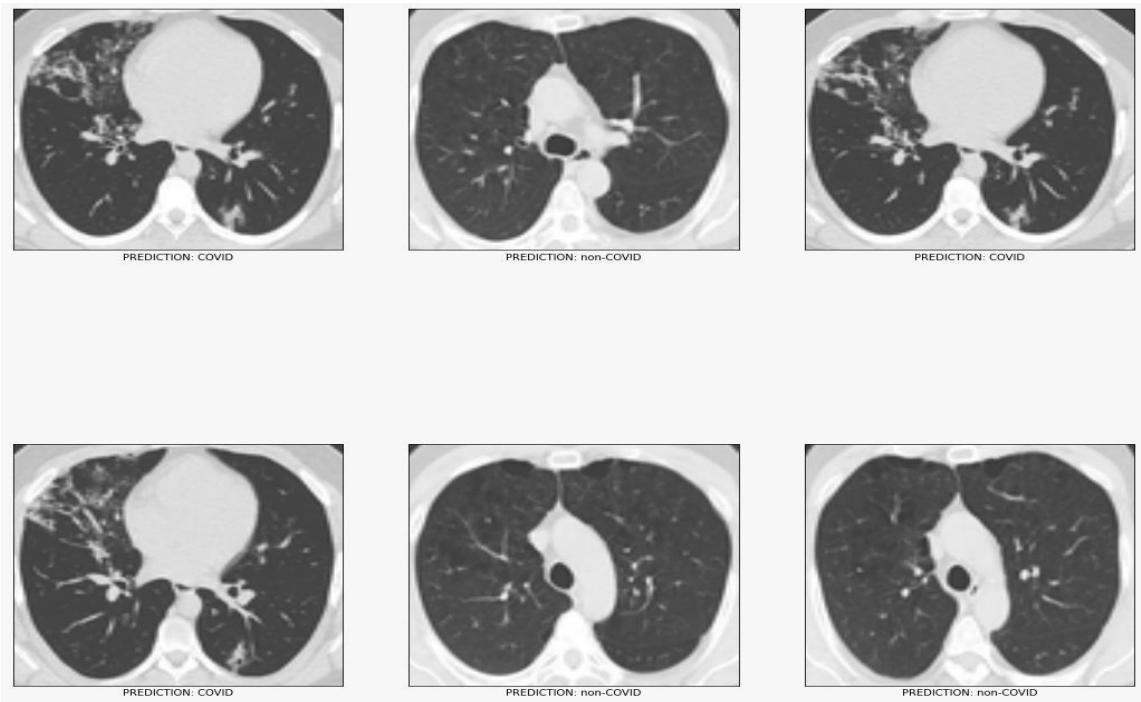


Figure 8. Covid-19 and non-covid-19 images

The accuracy of ResNet over various epochs is shown in Figure 9.

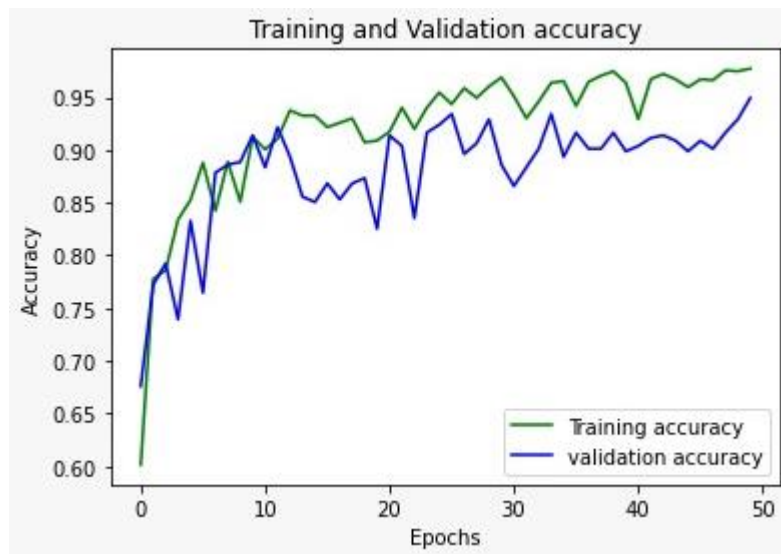


Figure 9. Accuracy of ResNet

The accuracy of EfficientNetB3 over various epochs is shown in Figure 10.

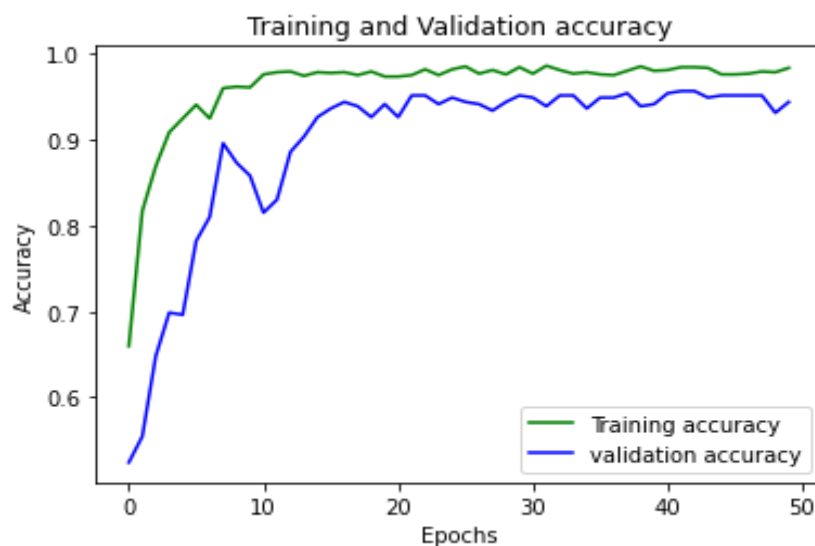


Figure 9. Accuracy of EfficientNetB3

The comparison of accuracy between EfficientNetB3 and ResNet models is depicted in Figure 10.

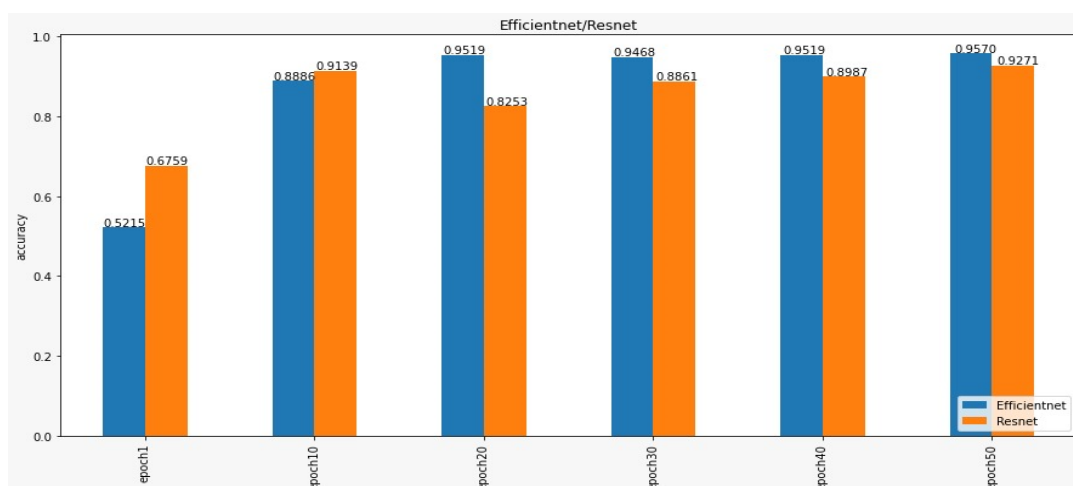


Figure 10. Comparison of accuracy between EfficientNetB3 and ResNet

The comparison of various performance metrics between EfficientNetB3 and ResNet models is depicted in Figure 11.

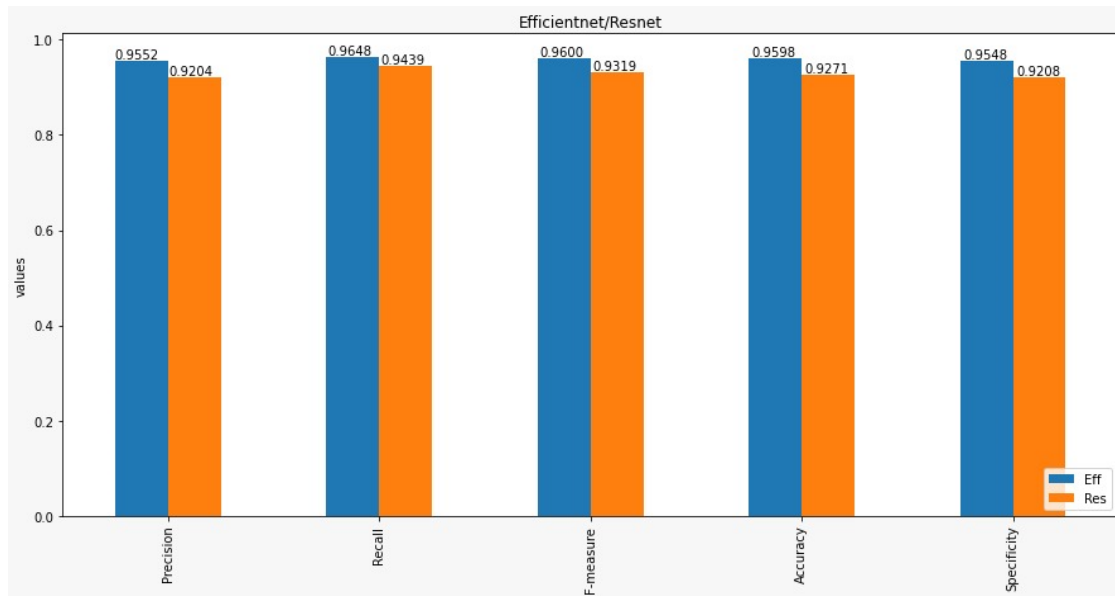


Figure 11. Comparison of various parameters between EfficientNetB3 and ResNet

5. CONCLUSION AND FUTURE WORK:

Thus the Convolutional Neural Network (CNN) algorithm classifies covid-19 disease with better accuracy while using EfficientNet model and also the images of the covid-19 detected and non-covid are displayed.

In future, other type of learning can be used in the proposed model with more number of classes and large dataset.

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ANTIMICROBIAL ACTIVITY OF ENDOPHYTIC STREPTOMYCES STRAIN KCA2 ISOLATED FROM PHYLLANTHUS NIRURI

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ABSTRACT

Traditional antimicrobial drugs are becoming more resistant to emerging infectious diseases, which necessitates the discovery of new efficient antimicrobial compounds. Although the use of antibiotics is irrational, it has the effect of increasing microbial resistance and increasing the mortality rate linked with infections. In order to overcome antimicrobial resistance, it is crucial to identify novel metabolites. The present study is aimed to isolate endophytic *Streptomyces* KCA2 from medicinal plant *Phyllanthus niruri* leaves explored for antimicrobial activity against various clinical pathogens. The *Streptomyces* strain KCA2 screened for antimicrobial activity against *Staphylococcus aureus*, *Bacillus cereus*, *Micrococcus*, *Escherichia coli*, *Providencia*, *Vibrio*, *Aeromonas hydrophila*, *Klebsiella pneumoniae* and *Candida albicans*. The metabolite production and optimization were screened by solid and liquid state fermentation method. *Streptomyces* strain KCA2 showed more than 20 mm zone of inhibition against *S. aureus* and *C. albicans*. It also exhibited maximum level of antimicrobial metabolite production in solid state fermentation during ninth day of incubation. In fermentation experiment, variables such as fructose and malt extract were found to influence the antimicrobial compound production. The strain KCA2 was identified as *Streptomyces* based on the morphological, microscopic, cultural and physiological properties.

Key words: endophytic *Streptomyces*, antimicrobial, metabolite production and *Staphylococcus aureus*.

INTRODUCTION

One of the biggest breakthroughs in medical history is the discovery of antibiotics and their therapeutic use. The acquisition and spread of antimicrobial resistance, on the other hand, is a serious worldwide issue that has evolved in the post-antibiotic era (Vrancianu et al., 2020). The most common AMR pathogens are *Enterococcus faecium*, *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Acinetobacter baumannii*, *Pseudomonas aeruginosa*, and *Enterobacter* species (Santajit and Indrawattana, 2016; Penes et al., 2017; World Health Organization [WHO], 2017). For instance, in Gram positive bacteria (GPB), *Staphylococcus aureus* are frequently developed resistant to methicillin and referred as methicillin-resistant *S. aureus* (MRSA) (Nepal et al., 2017). It is reported that more than 7,00,000 deaths occur every year because of AMR in global level (AMR, 2020). The management of AMR is difficult and requires a multinational approach. The reduction in the number of novel antibiotics that have been found and produced in recent years is indeed a challenge to the researchers (Sharma and Thakur, 2020). This has called for increased search for novel antibiotics to be discovered.

Microorganisms especially the phylum actinobacteria, which have been reported to produce more than 10,000 different bioactive molecules. Actinobacteria are Gram-positive bacteria that are aerobic, filamentous, and have a high proportion of G + C in their DNA (>55 percent) (Zhao et al., 2006). The genera *Streptomyces* and *Micromonospora* provide more than 70% of all naturally occurring antibiotics (Ghosh et al., 2017). Endophytic microorganisms reside in healthy plant tissues and have a symbiotic connection with the host plant. Endophytic actinobacteria biodiversity is recognised as a significant resource. A broad range of taxonomic status of medicinal plant-associated endophytic actinobacteria has been investigated in a number of studies (Girao et al., 2019; Musa et al., 2020; Singh and Dubey, 2020; Rante et al., 2020). The present study reports the isolation of endophytic *Streptomyces* strain KCA2 from the medicinal plant *Phyllanthus niruri* and their antimicrobial properties.

MATERIALS AND METHODS**Sample collection:**

Medicinal plant *Phyllanthus niruri* was collected from vicinity of Sathyabama Institute of Science and Technology, Chennai, Tamil Nadu. The plant parts were rinsed thoroughly in running tap water to remove sand and dust particles and placed inside a zip-lock cover and were brought to the laboratory.

Isolation and characterization of endophytic *Streptomyces*

The plant parts were cut into small pieces and were subjected to surface sterilization so as to ensure the removal of surface microbes. The most commonly used surface sterilants include ethanol (70% for 1min) and a strong oxidant or general disinfectant like household bleach (NaOCl) with 2-5 % (w/v), available chlorine (for 2-4

min). Then the surface sterilized samples were crushed in a mortar and pestle. One ml of crushed sample was serially diluted from 10^{-1} to 10^{-5} using sterile 9 ml water blank. Hundred μ l of aliquot from $10^3 - 10^5$ dilutions were plated on starch casein agar supplemented with nalidixic acid (20 μ g/ml) to inhibit the growth of fast-growing eubacterial colonies and nystatin (50 μ g/ml) to suppress the fungal growth. After incubating the plates for 20-28 days at 28°C, all the endophytic actinobacterial colonies were recovered and sub-cultured in individual ISP2 agar plates. After confirming the purity, morphologically dissimilar actinobacterial colonies were sub-cultured on ISP2 agar slants as well as in 20% glycerol broth and stored at 4°C and -20°C, respectively. Cultural characteristics such as growth rate, consistency, aerial mass colour, reverse side pigment and soluble pigment production and microscopic characteristics such as presence of aerial and substrate mycelium, mycelial fragmentation and spore chain morphology were recorded.

Preliminary screening for antimicrobial activity

Antimicrobial activity of *Streptomyces* strain KCA2 was tested against clinical pathogens such as *Staphylococcus aureus*- ATCC 29213, *Bacillus cereus*, *Micrococcus* sp., *Escherichia coli*- ATCC 25922, *Providencia* sp., *Vibrio* sp., *Aeromonas hydrophila*, *Klebsiella pneumoniae*- ATCC 13882 and *Candida albicans* by agar plug method. Inoculum with 0.5 McFarlands standard was prepared using sterile nutrient broth and inoculated onto Muller Hinton Agar (MHA) plates using sterile cotton swabs. Agar plugs of 10 days old *Streptomyces* strain KCA2 with 5mm diameter were taken from ISP2 agar plate and placed over the MHA agar plates seeded with test pathogens. Zone of inhibition was measured after 24 hours of incubation at 37°C and the results were expressed in millimetre in diameter.

Effect of fermentation method on bioactive metabolites production by the strain KCA2

Effect of solid-state and submerged fermentation on bioactive metabolite production by *Streptomyces* strain KCA2 was investigated. Spores of the endophytic *Streptomyces* strain KCA2 was inoculated into five ISP2 agar plates (90mm) and 100 ml of ISP2 broth. ISP2 agar plates were kept in the incubator at 28°C for 15 days whereas the ISP2 broth containing flasks were incubated in rotary shaker with 120 rpm at 28°C for 15 days. After 3 days, for every 24 hours, agar plug from ISP2 agar plates were taken and tested for antimicrobial activity against *S. aureus* by agar plug method. Similarly, each 2 ml of endophytic *Streptomyces* strain KCA2 inoculated in ISP2 broth was taken and centrifuged at 10000 rpm for 10 minutes. Further, the cell free supernatant was collected and antimicrobial activity was tested against *S. aureus* by adopting agar well diffusion method.

Extraction of bioactive metabolites

The spores of the endophytic *Streptomyces* strain KCA2 was inoculated into ISP2 agar plates for its growth and bioactive metabolite production. After incubating the plates for 7 days, the spores were scrapped out and the agar blocks were collected and mixed with ethyl acetate (1:2 ratio) for the extraction of metabolites. After 24 hours, the agar blocks were removed and the solvent was collected and evaporated using rotary evaporator so as to get the crude extract. The antimicrobial activity against *S. aureus* was tested for crude extracts of *Streptomyces* strain KCA2 by agar well diffusion method.

Secondary determination of antimicrobial activity

The crude ethyl acetate extract of *Streptomyces* strain KCA2 was then checked for antimicrobial activity against various clinical pathogens via, *Staphylococcus aureus*- ATCC 29213, *Bacillus cereus*, *Micrococcus* sp., *Escherichia coli*- ATCC 25922, *Providencia* sp., *Vibrio* sp., *Aeromonas hydrophila*, *Klebsiella pneumoniae*- ATCC 13882 and *Candida albicans* using disc diffusion method. Sterile empty filter paper disc (Himedia) with 5 mm diameter was impregnated with 20 μ l of endophytic *Streptomyces* strain KCA2 ethyl acetate crude extract (100 μ g/ml) and kept for drying. The panel of clinical pathogens, as mentioned above, were grown in nutrient broth. Inoculum equivalent to 0.5 McFarland standards was spread evenly over the surface of MHA plate using sterile cotton swab. Once the discs were dried, they were placed over the pathogens inoculated MHA plates and incubated at 37°C. After 24 hours of incubation the diameter of the zone of inhibition was measured and expressed in millimeter.

Characterization, optimization and taxonomy of *Streptomyces*

Streptomyces strain KCA2 was characterized based on their cultural, morphological and physiological properties. The mycelial growth on ISP2 agar plates was observed under bright field microscope at 10X and 40X magnification to record the presence of aerial, substrate mycelium, mycelial fragmentation and spore chain arrangement. Cultural characteristics such as growth, colony consistency, aerial mass colour, production of reverse side and soluble pigment by *Streptomyces* strain KCA2 was studied by growing the culture on ISP2 agar plates for 7-14 days at 28°C. Morphological characteristics were observed in different culture media such as tryptone agar (ISP1), yeast extract-malt extract agar (ISP2), oatmeal agar (ISP3), inorganic salts-starch agar

(ISP4), glycerol-asparagine agar (ISP5), peptone-yeast extract-iron agar (ISP6) and tyrosine agar (ISP7). The results were noted after incubation at 30°C for 7-10 days. The *Streptomyces* strain KCA2 was studied for the utilization of carbon, nitrogen, minerals sources and enzyme production. Also, the effect of different pH levels and NaCl concentration on its growth were studied.

RESULTS AND DISCUSSION

Endophytic *Streptomyces* KCA2

Endophytic *Streptomyces* strain KCA2 showed good growth on ISP2 agar medium appear to be powdery in nature. The aerial mass colour of KCA2 found to be grey with a reverse side pigment as pale yellow. It showed the presence of aerial and a branched substrate mycelium which differentiate into short to flexuous chains of smooth-surfaced spores. Similarly, *Streptomyces* isolated from medicinal plants showed similar kind of morphological characters (Passari et al., 2015; Qin et al., 2009; Bhatia et al. 2019; Gangwar et al., 2011).

Evaluation of antimicrobial activity

The *Streptomyces* strain KCA2 isolated from the leaves of *Phyllanthus niruri* showed maximum inhibition against *S. aureus* and *C. albicans* with the zone of inhibition ranging 22.8mm to 21.5mm in diameter in preliminary screening. Similarly, in secondary screening also it showed maximum zone of inhibition against *S. aureus* and *C. albicans* with the zone of inhibition ranging 21.3mm to 21.2mm in diameter (Figure 1). In preliminary screening, KCA2 showed least antimicrobial activity against *Vibrio* (11.5mm), *Providencia* (12.2mm), *A. hydrophila* (12.5mm) followed by *E. coli* (13mm) and *Micrococcus* (14.2mm). In secondary screening it showed least antimicrobial activity against *Vibrio* (12.5mm), *Providencia* (12.5mm) followed by *E. coli* (12.8mm) and *A. hydrophila* (13.5mm) (Figure 1).

Endophytic actinobacteria isolated from medicinal plant *Phyllanthus niruri*, showed strong antimicrobial activity against various pathogens (Bhatia et al. 2019; Gangwar et al., 2011; Singh and Padmavathy, 2015). Bhatia et al., 2019, reported that endophytic actinobacteria isolated from *P. niruri* showed maximum zone of inhibition against gram negative pathogen *P. fluorescens*, which is correlated with our present study, KCA2 isolated from *P. niruri* also showing zone inhibition against the gram-negative pathogens.

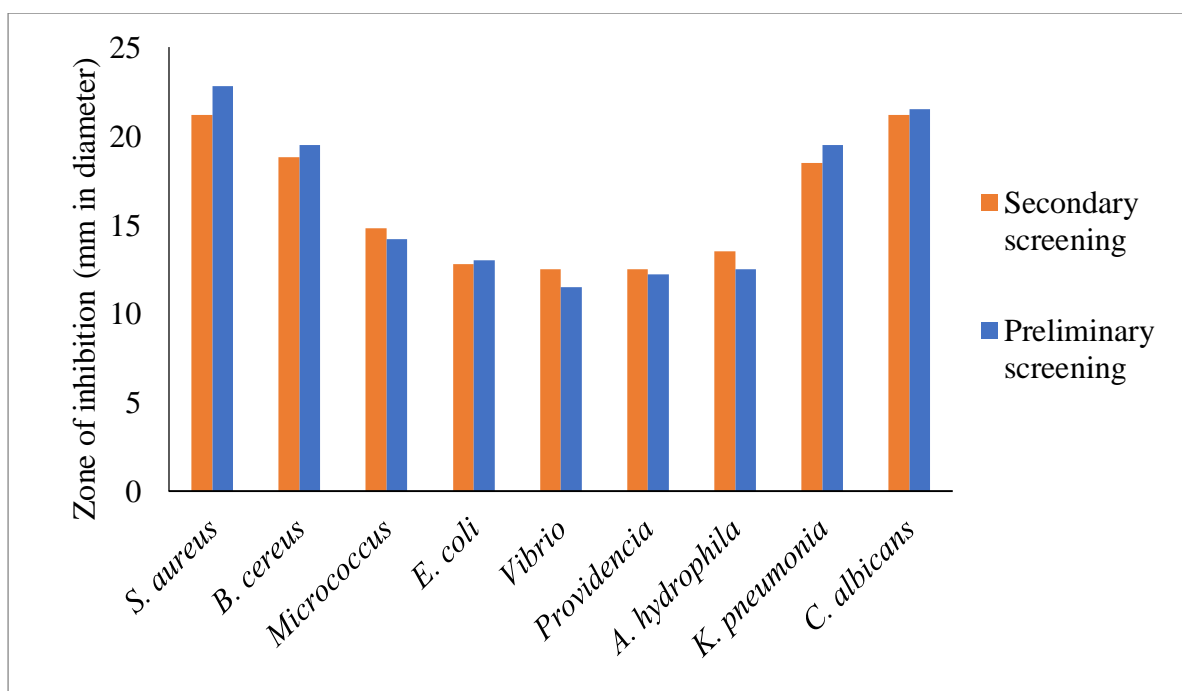


Fig. 1: Antimicrobial activity of *Streptomyces* strain KCA2 against different pathogens

Effect of fermentation method on bioactive metabolites production

The *Streptomyces* strain KCA2 showed a good bioactive metabolite production in both solid as well as in submerged state fermentation. From day 3 to day 15, it was noted that the metabolites produced by the *Streptomyces* strain KCA2 showed maximum activity against *S. aureus* in solid state fermentation compared to that of submerged fermentation (Figure 2). The metabolite production was thus confirmed to be faster and stable in solid state having an inhibition zone of 12.2mm in diameter on day 3 to 19.5mm, which was the maximum, on day 9 when compared to that of submerged fermentation where the zone of inhibition showed on day 5 and it reaches the maximum level on day 9 with the inhibition zone of 15.9mm. However, a gradual reduction in the

inhibition zone was observed from 9th day of its growth in both solid and submerged state fermentation. Our present study correlated with Radhika et al., 2011, who reported that the bioactive metabolite production from *Streptomyces* showed antimicrobial activity against *S. aureus* in both solid and submerged state fermentation. But most of the *Streptomyces* strains were reported to show bioactive metabolite production in solid state and failed to show activity when produced in liquid culture. Gebreyohannes et al., 2013, studied actinobacteria for solid and submerged state fermentation and bioactivity was also checked against various pathogens. Similar to our study, they reported that both the fermentation methods were suitable for bioactive metabolite production and showed provident antimicrobial activity against various pathogens.

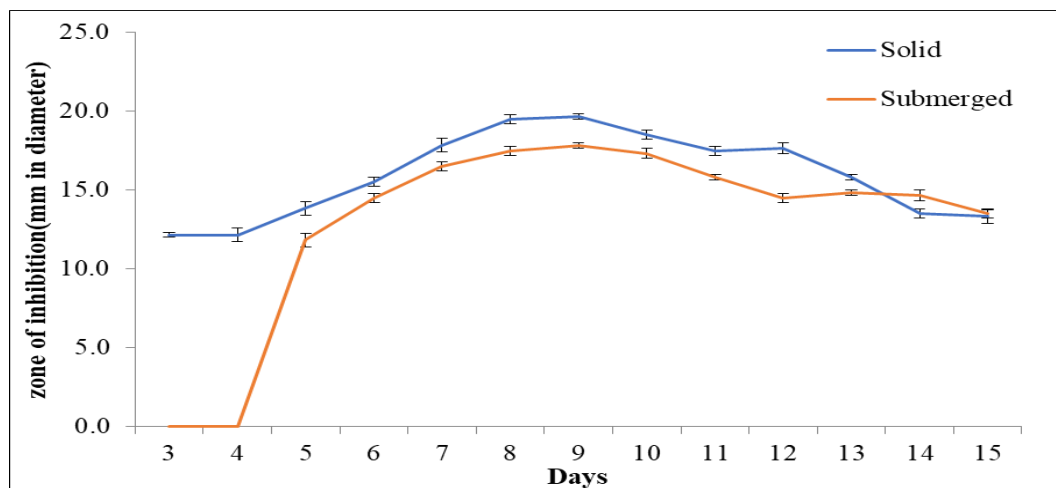


Fig 2: Effect of solid and submerged fermentation for antimicrobial metabolite production from the *Streptomyces* strain KCA2 against *S. aureus*.

Characterization, optimization and taxonomy of *Streptomyces* strain KCA2

The cultural characteristics of the strain KCA2 is shown in table 1. It showed good growth on ISP2 and ISP5 and moderate growth on ISP3 and ISP7. The *Streptomyces* strain KCA2 was found to utilize wide range of carbon (Glucose, Sucrose and Fructose), nitrogen (Yeast extract and Malt extract) for their good growth and secondary metabolite production. *Streptomyces* strain KCA2 was found to have glutaminase and amylase production. Other factors like pH and NaCl were also found to regulate the growth and secondary metabolite production of *Streptomyces* strain KCA2 (table 1). Among all the parameters tested, *Streptomyces* strain KCA2 was found to show maximum growth and antimicrobial activity against *S. aureus* on utilisation of fructose as a carbon source, malt extract as a nitrogen source, and pH 7 (table 1). Similarly, Manikkam et al., 2015, also studied the influence of different carbon sources for the growth and metabolite production of *Streptomyces* strain against *S. aureus*. It showed glucose as the most predominant carbon source followed by fructose, xylose, and sucrose. Al-ghazali and Omran, 2017, reported that *Streptomyces* sp. LH9 used dextrose as a carbon source and produced maximum activity against *E. coli*, *P. aeruginosa*, *S. aureus* and *S. agalactiae*. They also studied different nitrogen sources for metabolite production and reported peptone as the excellent nitrogen source against *E. coli*, *P. aeruginosa*, *S. aureus* and *S. agalactiae*, whereas our present study showed malt extract having maximum activity against *S. aureus* and *E. coli* (Al-ghazali and Omran, 2017). Our result is correlated with Manikkam et al., 2015, reported that malt extract used as nitrogen source showed maximum activity against *S. aureus*. *Streptomyces* can tolerate wide range of pH and are able to grow in higher saline condition (Norovsuren et al., 2007). Our present study reported that the *Streptomyces* strain KCA2 showed good growth in pH 7 and was able to tolerate NaCl up to 1%. This investigation also coincides with other's reports (Manikkam et al., 2015; Sengupta et al., 2015).

TABLE 1. EFFECT OF CRITICAL MEDIUM COMPONENTS ON ANTIMICROBIAL COMPOUNDS PRODUCTION BY ENDOPHYTIC *STREPTOMYCES* STRAIN KCA2

| Characteristics | Variables | Growth | Antimicrobial activity <i>S. aureus</i> (mm) |
|--------------------------|-----------------------------------|--------|--|
| Cultural Characteristics | ISP1 (Tryptone agar) | + | 0 |
| | ISP2 (Yeast extract malt extract) | +++ | 21.2±0.7 |
| | ISP3 (Oatmeal agar) | ++ | 12.5±0.2 |
| | ISP4 (Inorganic salts- starch) | - | 0 |
| | ISP5 (Glycerol asparagine) | +++ | 15.6±0.6 |

| | | | |
|--------------------------------|------------------------------------|-----|-----------|
| | ISP6 (Peptone Yeast extract iron) | + | 0 |
| | ISP7 (Tyrosine agar) | ++ | 0 |
| Utilization of Carbon source | Glucose | +++ | 19.5±0.5 |
| | Arabinose | - | 0 |
| | Sucrose | +++ | 0 |
| | Xylose | - | 0 |
| | Inositol | - | 0 |
| | Mannitol | - | 0 |
| | Fructose | +++ | 21.5±0.3 |
| | Rhamnose | + | 0 |
| | Raffinose | ++ | 9.5±0.2 |
| | Cellulose | + | 0 |
| | | | |
| Utilization of Nitrogen source | Peptone | + | 0 |
| | Yeast Extract | +++ | 0 |
| | Malt Extract | +++ | 19.8±0.4 |
| | KNO ₃ | - | 0 |
| | Soybean (NaNO ₃) | - | 0 |
| Enzyme production | Asparaginase | - | 0 |
| | Glutaminase | ++ | 0 |
| | Amylase | +++ | 0 |
| | Protease | + | 0 |
| | Lipase | - | 0 |
| pH | 5 | - | 0.0 |
| | 7 | +++ | 20.5±0.27 |
| | 9 | - | 0.0 |
| | 11 | - | 0.0 |
| NaCl Tolerance (%) | 0 | +++ | 21.5±0.3 |
| | 1 | ++ | 20.2±0.5 |
| | 2.5 | - | 0.0 |
| | 5 | - | 0.0 |
| | 7.5 | - | 0.0 |
| | 10 | - | 0.0 |

Thus, our study leads to future development of promising a novel microbial drugs against various antimicrobial resistance pathogens. Further research including purification, chemical characterization and structure elucidation of active metabolite is to proceed to prove its potential.

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CONSUMER PROTECTION ACT, 2019: AN OVERVIEW

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ABSTRACT

Eventually a 3 decade old Consumer Protection Act 1986 has been replaced by Consumer Protection Act, 2019. This relief was the need of modern Indian consumer. It'll empower consumers and help them in guarding their rights through the various notified rules and vittles. The Act aims at guarding and strengthening the rights of the consumers by establishing authorities, assessing strict arrears and penalties on product manufacturers, electronic service providers, misleading advertisers, and by furnishing fresh agreement of consumer difficulties through agreement. It's projected that nearly 328.92 million Indian citizens are going to buy products online, which means 77 of mobile internet stoners will protect online. We can say that new consumer protection act 2019 is going to be truly helpful for Indian consumers. This paper deals with the new changes in consumer protection act for strengthening the rights of the consumers.

Keywords: Consumer Protection Act, 2019, Product Liability, Unfair Trade Practices

INTRODUCTION

The new Consumer Protection Act, 2019 came into force on 20th July 2020 and it'll empower consumers and help them in guarding their rights through its colorful notified rules and vittles. It provides lesser protection to consumer interests taking into consideration the current age of digitization. The 2019 Act also deals with the technological advancements in the assiduity, provides for easier form of complaints and also imposes strict liability on businesses including endorsers for violating the interest of the consumers.

Historical Perspectives of Consumer Protection in India

Consumer Protection has its deep roots in the rich soil of Indian civilization, which dates back to 3200 B.C. In ancient India, mortal values were cherished and ethical practices were considered of great significance. Still, the autocrats felt that the weal of their subjects was the primary area of concern. They showed keen interest in regulating not only the social conditions but also the profitable life of the people, establishing numerous trade restrictions to cover the interests of buyers. Manu Smriti describes the social, political and profitable conditions of ancient society. Manu, the ancient law giver, also wrote about ethical trade practices. He prescribed a code of conduct to dealers and specified corrections to those who committed certain crimes against buyers. Written posterior to Manu Smriti, Kautilya's Arthashastra is considered to be a composition and a prominent source, describing various compositions of statecraft and the rights and duties of subjects in ancient society. Though its primary concern is with matters of practical administration, consumer protection occupies a prominent place in Arthashastra. It describes the role of the State in regulating trade and its duty to prevent crimes against consumers. In the medieval period, consumer protection continued to be of prime concern of the rulers. During Muslim rule, a large number of units of weights were used in India. During the Sultanate period, the prices used were determined by local conditions. During the rule of Alauddin Khalji, strict controls were established in the market place. In those days, there was unending supply of grain to the city and grain

-carriers sold at prices fixed by the Sultan. There was a mechanism for price- enforcement in the market. Similarly, shop-keepers were punished for under weighing their goods. In the modern period, the British system replaced the age old traditional legal system of India. However, one of the outstanding achievements of British rule in India was "the formation of a unified nationwide modern legal system."

During the British period, the Indian legal system was completely revolutionized and the English legal system was introduced to administer justice. Still, it is important to note that the traditions and customs of the Indian legal system were not ignored. Some of the laws which were passed during the British governance concerning consumer interests are: the Indian Contract Act of 1872, the Sale of Goods Act of 1930, the Indian Penal Code of 1860, the Drugs and Cosmetics Act of 1940, the Usurious Loans Act of 1918, and the Agriculture Procedure (Grading and Marketing Act) of 1937. These laws handed specific legal protection for consumers. Consumer protection legislation legislated after India's independence from Britain include: the Essential Commodities Act of 1955, the Prevention of Food Adulteration Act of 1954 and the Standard of Weights and Measures Act of 1976. A benefit of these Acts is that they do not require the consumer to prove mens rea. Rather, "the offenses are of strict liability, and not dependent on any particular intention or knowledge." Criminal law in the field of consumer protection has acquired much significance, as consumers are less inclined to go to civil court for small claims. It has been said that "the functional value of criminal law in the field of consumer

protection is a high one and it has a respectable pedigree." Another view is that there has been an attempt to look at consumer protection as "a public interest issue rather than as a private issue" to be left to individuals for settlement in court.⁸ The Indian legal system experienced a revolution with the enactment of the Consumer Protection Act of 1986 ["CPA"], which was specifically designed to protect consumer interests. The CPA was passed with avowed objectives. It is intended to provide justice which is "less formal, [and involves] less paper work, less delay and less [expense]". The CPA has received wide recognition in India as poor man's legislation, ensuring easy access to justice.

(CONSUMER PROTECTION ACT, 2019)

Number of new changes has been introduced in the new Consumer Protection Act, 2019 ("Act 2019"). The major changes explained briefly are The changes in this regard were:

E Commerce Companies

The new Act has inculcated colorful new vittles with regard to digitalization. This welcome change had come necessary given the inviting arrival of e-transactions. Consumer rights also had to be evolved accordingly. Now E-Commerce Companies will fall under the dimension of a structured consumer redressal medium, which will be empowered to conduct examinations into violations of consumer rights.

- *E-commerce platforms will now have to admit the damage of any consumer complaint within 48 hours and requital the complaint within a month from the date of damage.*
- *Every E-Commerce Reality is needed to give information relating to return, refund, exchange, bond and guarantee, delivery and payload, modes of payment, grievance redressal medium, payment styles, security of payment styles, charge- reverse options, etc., including country of origin, which are necessary for enabling the consumer to make an informed decision at the pre-purchase stage on its platform.*

Rules for forestallment of illegal trade practice in E-Commerce

- (i) *The Consumer Protection (E-commerce) Rules, 2020 are obligatory and aren't advisories.*
- (j) *Merchandisers cannot refuse to take back goods or withdraw services or refuse refunds, if similar goods or services are imperfect, deficient, delivered late, or if they don't meet the description on the platform.*

The rules also prohibit the e-commerce companies from manipulating the price of the goods or services to gain unreasonable profit through unjustified prices.

1. Description of consumer expanded

"consumer" "buys any goods" and "hires or avails any services" includes offline or online deals through electronic means or by teleshopping or direct selling or multi-level marketing. Means

it extended it home toe-commerce as well.

Food is also part of Good

"Goods" means every kind of portable property and includes "food" as defined in clause

(k) *of sub-section (1) of section 3 of the Food Safety and Norms Act, 2006. It'll take under the dimension of new food delivery the platform, and clearly insure the food safety and quality with the reverse of Food Safety and Norms Act, 2006.*

Telecom under the Service home

The word "telecom" been including in the act, but the word creates confusion, as its only define "telecom", but has not been articulated as "telecommunication services" as has been defined in the Telecom Regulatory of India Act. If the word used in the reverse of "telecommunication services" also it would be a great relief for the consumers.

- *E-filing The new Act 2019 also allows for the complaints to be filed electronically.*
- *Hearing and examination of parties through videotape –conferencing*
- *Dealer's description expanded to include e-commerce platforms.*

2. Establishment of Central Consumer Protection Authority

As per Section 10 (1) of the Act 2019, the Central Consumer Protection Authority was established to regulate matters relating to violation of rights of consumers, illegal trade practices and false or deceiving announcements which are prejudicial to the interests of the public and consumers and to promote and apply the rights of consumers as a class. To execute the functions laid on it, the CCPA also enjoys a wide range of

powers including but not limited to inquiry, disquisition, direction for producing documents, recall of goods or withdraw services, duty of fine, restrain false announcements, etc. The functions of the CCPA are non-supervisory, investigative and adjudicative contemporaneously.

3. Consumer Complaints and Redressals

- *A consumer can launch a complaint from where he resides and not at the place where the sale took place.*
- *There will be no figure for filing cases up to Rs 5 lakh.*
- *There are facilities for filing complaints electronically, credit of quantum due to unidentifiable consumers to Consumer Welfare Fund (CWF).*

4. Constitution and Adjudication

- *The State Commissions will furnish information to central government on a daily basis on vacancies, disposal, pendency of cases and other matters, the release said.*

Commission of the State and District Commissions to review their own orders, enabling a consumer to file complaints electronically and train complaints in consumer Commissions that have governance over the place of his hearthstone, videoconferencing for hail and supposed admissibility of complaints if the question of admissibility isn't decided within the specified period of 21 days. Alternate Disagreement Resolution medium of Agreement has been handed, simplifying the adjudication process.

- *A complaint will be entertained by a Consumer Commission for agreement, wherever compact for early agreement exists and parties agree for it. Agreement will be held in the Agreement Cells to be established under the aegis of the Consumer Commissions. There will be no appeal against agreement through agreement.*
- *The Central Consumer Protection Council Rules are bi-manual for constitution of the Central Consumer Protection Council. A premonitory body on consumer issues, headed by the Union Minister of Consumer Affairs, Food and Public Distribution with the Minister of State as Vice-Chairman and 34 other members from different fields.*
- *The Central Consumer Protection Council, that encompasses a three-time term, will have Minister-in-charge of consumer affairs from two countries from each region-North, South, East, West, and NER. There's also provision for having working groups from amongst the members for specific tasks.*
- *The generality of product liability has been introduced in the Act which affixes the liability for faults in goods as well as services to the product manufacturer, product service provider and the product dealer. The interesting aspect of the provision is that now the liability for the product is attached more towards the manufacturers than the dealer. The Act 2019 also makes out certain exceptions to these arrears where the consumer is primarily at fault and the product has been misused, altered or modified.*

5. Prohibition of Illegal Trade Practices

A broad description of Illegal Trade Practices (2) has also been introduced under the Act 2019. This description covers the broad range of illegal or deceptive practices in promoting the trade, dealing or use of any goods or services. It includes making false statements in regard with goods and services, false representations, guarantees not predicted on proper testing, and in general misleading the public.

6. Penalty against false or deceiving advertisements

In an attempt to check deceiving advertisements, the Act 2019 has granted wide powers to CCPA to check deceiving announcement. The CCPA after probing that an advertisement is false or deceiving and is prejudicial to the interest of any consumer or is in violation of consumer rights, by order issues directions to the concerned dealer or manufacturer or endorser or advertiser or publisher, as the case may be, to discontinue advertisements or to modify the same in analogous manner and within analogous time as may be specified in that order. Notwithstanding the orders the CCPA may put penalty in respect of false or deceiving advertisements to the tune of Rs/- (Rupees Ten Lakhs Only) or imprisonment for over to 2 (two) times. In case of posterior offence, the CCPA can enhance the fine bluffs (Rupees Fifty Lakhs Only) with over to 5 (five) times of imprisonment in case of posterior offence. In sum and substance the legislative intent under the Act 2019 is to make the endorser reactionary of the advertisement they are backing.

7. Alternate Disagreement Resolution medium introduced

For cost effective and speedy disposal of matters by the Legislature, the Act 2019 has been included in Part V of the Act included Mediation. The Act 2019 provides that every proceeding before the State, District, National commission where element of agreement exists which is respectable to the parties shall be appertained to agreement. The central government recently on 15th July 2020 notified Consumer Protection (Agreement) Rules, 2020. The said Rules still fluently list out matters which under no circumstance can be inter-mediated, analogous as, matters relating to medical negligence performing in death or grievous injury, matters relating to public interest action, matters involving serious allegations of fraud, fabrication of documents, phony, impersonation and coercion, matters related to lawless prosecution and non-composite offenses etc.

CONCLUSION

The New Act establishes responsibility and affixes liability amongst the product manufacturers, merchandiser and service providers and aims to discipline businesses that engage in fraud on quality or specified illegal trade practices. Further, the setting up of the CCPA, with its in-house ministry to probe along-with correction vittles has added teeth to the law. The Act is a welcome change in favor of the consumers. It provides them with easily defined rights and disagreement resolution process which may enable them to resolve their grievances on a fast-track base. Online commerce and online transactions spots, which have all throughout been included under the horizon of an "aggregator", have also been included under the horizon of this Act which will place more responsibility on them with respect to the goods and services being sold and provided by them. Apart from establishing authorities at district, state and national level for consumer disputes redressal, the Act also seeks to hold the product manufacturers liable along with the product service providers and product sellers where the rights of the consumer have been infringed due to defects or deficiency in the goods and services provided.

CPA 2019 may have wide ramifications on businesses especially start-ups who are keen on expanding their business. A new challenge has been thrown to the Indian businesses, who would need to optimise their resources, capability and innovation to produce products and provide Services of global standard and quality specifications.

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STUDY OF FOREIGN LANGUAGE TEACHING AND LEARNING PEDAGOGY DURING PANDEMIC SITUATION

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ABSTRACT

Third Millennium teaching and learning focuses on the overall development of the learner through the contemporary education practices and pedagogies. The evolution of various educational paradigm concentrates on the facilitation of teaching and learning and the satisfaction of the needs of the learner and the society. The self-learning and autonomous attitude of the learner lead to the enhancement of the knowledge. The e-learning pedagogy that comes into vigor or action since the unexpected attack of COVID 19 has completely changed the perception of teaching and learning. The pandemic conditions set back the life of the human beings thus leading towards the dissatisfaction and depression. Moreover, the use of technology becomes the inevitable part of the teaching -learning process but the learners found themselves away from the supportive presence of their mentors. At this moment, the requirement of the pedagogy is identified that can motivate the learners and encourage them to learn. This paper posits on the facilitation of the remote teaching and learning of the foreign language through the combination of humanistic and social-constructivist approach. The Humanistic approach of language learning focuses on the respect of the need and the self-actualization of the learners that will motivate them to learn to learn. Moreover, the social constructivism paradigm will encourage the learner to learn through the real-life situations.

Keywords Teaching, Learning, Foreign Language, Humanistic approach, Social constructivism

INTRODUCTION

The learning of the foreign language has passed several phases to make it more effective and easy for the learners. The various teaching methods have been employed by the teachers to facilitate the learning of the foreign languages. These methods include the Grammar Translation Method, The Audiolingual Method, Communicative Language Method, Total Physical Response, The Silent Way, The Natural Approach and Suggestopedia and the other innovative techniques of the teachers. The learning and teaching approaches of teaching the foreign languages evolved when the technology entered in the society and becomes the inevitable part of the life. Thus, the generation of 1980s that opened their eyes in the internet age also called as the “digital natives”- the Millennials and Gen Z, needs the change in the teaching and learning methods. The traditional approaches are unable to motivate them as they get bored with the classical method. This Millennial generation requires the active teaching method that make them self – dependant and develop their autonomy. The need of the interactive classrooms changes the place of the teacher from centre to the periphery and the learner occupies the central position of the classroom. The passive learner becomes the active learners and share their thoughts and ideas in response to the information received from the society. The generation that belongs to early 2010’s to mid-2020’s named as Generation Alpha is more active and digitalized in comparison to the earlier generation. But the attack of COVID19 pandemic disturbed them due to the recession. The need for the motivation and holistic development of the learner becomes dominant and the primary thought of discussion for the education policy makers. This paper concentrates on the implementation of the two teaching – learning approaches together to bring the holistic development of the learner and fulfill their needs to participate in the global affairs. The descriptive methodology of the paper will describe the method of implementation of the two strategies namely, Humanistic and Social constructivism, to enhance the deep and active learning among the learners who are already engaged in the diversified digital world.

The Paradigms of Learning of Foreign Language

The twenty-first century emphasizes on the learning of the foreign language to make the young generation enter into the global market of the multinational companies. Although the foreign languages were included in the syllabus of the schools and colleges in the late half of the twentieth century. Thus, the only method employed since twentieth century but the focus on the teaching methodology came into existence since 21st century. The teaching of the foreign language in the twentieth century started with the Grammar Translation Method and this method is still in use all over the world. But with the evolution of the teaching methodologies, the traditional method of Grammar Translation Method becomes the secondary method and the other methodologies become the primary methodologies. These methodologies concentrate on the facilitation of teaching -learning. The traditional pattern of learning and teaching deals with the focus on the limited syllabus and the learner was completely dependant on the teacher. The learners were not motivated to put their ideas or to activate their

creativity. As a result, the learners are unable to put forth their own needs, ideas, and thoughts. The creativity which portrays the thoughts of an individual learner, suffers the hindrance. The syllabus framed for each, and every level of education is limited. It makes the learner to study, to memorize, and then to produce it during the examination. This knowledge acquisition is limited to the syllabus and the duration. Besides this, the learner's progress is evaluated through the summative evaluation. It does not concentrate on the formative evaluation or the holistic development of the learner. This transmission of the knowledge from the authoritative teacher to the student results into the passive learning. At present, the teachers are also following the limited syllabus with different teaching approaches but now the learner has come to the center from the periphery and the teacher is a facilitator in the classroom of the foreign language. Thus, the requirement of the active learning occupies the thought where the learner can gain the knowledge through the creativity and self-learning and the teacher in such classes plays the role of the facilitator and the guide.

According to Arifi (2017), "the final aim of humanistic instructing is to make a dependable cultured society which adopts various cultures, in which it is very helpful in knowing one or more foreign languages." The teaching strategy should strengthen the role of the learner as an individual in the society. The learner should develop empathy for others and understand and respect the culture of the other people or other nations. The foreign language learning, thus bring the chance for the learners to interact and to understand different cultures. Thus, the teaching if includes the humanistic and social constructivism paradigms together in the teaching and learning of the foreign language, the holistic development of the learner will definitely take place. The humanistic approach of teaching was evolved in 1950's by Abraham Maslow, Rogers, and Kelly. By focusing on the learner, the humanistic classroom gives a comprehensive approach to learning. The learner is treated with respect as an individual who is in charge of his own education. Humanistic lectures are not prescriptive; rather, they flow according to the student's wants and enquiries. In a humanistic classroom, this approach helps give emotional support for students. The humanistic approach highlights the learning for the self-actualization of the learner. Thus, the teachers combine several teaching paradigms to facilitate the learning of the foreign language. The teachers motivate the learners to develop their skills of the foreign language and that will lead to the self-actualization. The role of the teacher as a counsellor supports the learner in achieving their goals. They are now no more the dictator to the learners whom they have to follow blindly without their point of view in the class. "Freeman (Freeman, 1996, p.103) considers that teachers constantly interpret the world around them: they interpret the subject they teach, the environment in which the classes are conducted, as well as the actions of the students." The humanistic approach of teaching the foreign language emphasizes the interest and the need of the learner. But the need of the learner could cause the hindrance in the learning as the class includes not only one learner. There are other learners who need the attention of the teacher and who want to fulfill their needs for the foreign language learning. The teacher also has to maintain the discipline and the interest of the learners for the learning of the foreign language. Thus, in order to influence the learners to understand the link between their needs and the proposed syllabus of the foreign language, the teacher has to develop their methodologies in such a manner that the learner leads towards the self-actualization and the construction of their knowledge as per the need of the time. Thus, the Humanistic approach of teaching – learning is not sufficient all alone. One needs to merge it with the other teaching paradigm that enables the learner to know the real-life situations and the different cultures. The Social constructivism, a learning approach proposed by Lev Vygotsky, augments the understanding of the real-life situations and the collaborative learning. Piaget, Bruner and then Vygotsky stress on the construction of the knowledge by the learner thus promoting the autonomy among the learners.

Bruner's constructivism concept demonstrates how interpersonal, inter-subjective, and collaborative processes are used to build shared meaning. Bruner's subsequent work was devoted to explaining this process. Social Constructivism introduces the myriad of the activities based on the real-life situations to involve the active participation of the learners. The involvement of the humanistic approach of learning- teaching works as a catalyst in the motivation and the development of the autonomy among the learners. The teachers act as a facilitator in the paradigm of social constructivism and humanism. These strategies emphasize on the self-learning and autonomy of the learners. The learning through experiences in real-life situations is the imperative part of these strategies. The goal of constructivism is not to memorize and regurgitate information (Sharma, 2006). The construction of the new knowledge takes place by the assimilation and accommodation of the new learning with the prior information or knowledge acquired by the learner. But here we need to discuss that whether the learner can learn without any motivation or his interest to that information or knowledge. Does the learning without any interest or need of the learner can be effective? Thus, to answer such question we need to see the place of the learner and the teacher in the classroom and also the role of the learner in the development of the syllabus.

Bruner, in his theory of constructivism (1915) focuses on the active learning by the learner who construct the new ideas and knowledge based on the prior knowledge. This active process of learning is possible only when the teacher and the learner come at the same platform to construct the new knowledge. The equal participation and interaction of the learner and the teacher for the preparation of the curriculum based on the needs and interest of the learner is given the priority. The alpha generation of today proposes the different innovative ideas that motivates their generation to enhance their learning through collaborative learning and innovative techniques. The teachers of today need to be well equipped in their knowledge of the content and the pedagogical tools. The participation of the learners in the preparation of the curriculum will motivate them to follow it and make it fruitful for all. This curriculum envisions the holistic development of the learners. The learning methodology of the foreign language changes with each generation due to their approach, understanding and requirement of the foreign language. Moreover, the role of the teacher as a counsellor also plays an active part in the motivation of the learner to learn the foreign language. The teacher counsels the learner and informs him about the need of the foreign language and its place in the global world of today. Although the Millennium generation, the alpha generation is already aware of the benefits of the foreign language due to the technology. But the teacher needs to be acquainted with the purpose of learning the language that is not common on the technology and motivates the learner for the construction of knowledge of the foreign language.

As we know that we want the learner not only to learn the new information that is the foreign language but above all the learners should accept it and only after the acceptance of learning the foreign language, they will understand it and learn it. The acceptance of the curriculum will bring the enthusiasm and interest of the student towards the active learning. The learner is interested in learning only the particular topic or subject and not the other as it is not the need of the student. The focus moves from listening to the lectures and passive learning by the learners to the needs of the learner and his self-actualization in the global learning. The learning of the foreign language comprises of the four skills namely reading, writing, speaking, and listening. These skills are developed and ameliorated by the support of the teacher. The teacher as a facilitator provides the authentic documents and the real-life situations to initiate the learning by the learner. These documents and supports provide the motivation to the learner for their active learning. The collaborative work in the classroom is initiated to develop the construction of the different ideas and its sharing with the other learners. This collaborative constructive learning develops the attitude of the teamwork. The respect for the ideas of the other learners of the team strengthens the humanity and the learning.

The humanistic and socio-constructivist approach also concentrate on the evaluation of the knowledge of learner. Here the teacher plays an important role as an evaluator because he is following the constructivism approach. Thus, he needs to evaluate constructively the knowledge of the learners. The learners are not stopped or corrected immediately at they commit the errors or mistakes. As the learner is learning the foreign language which is not his mother tongue and also not spoken in common outside the class, the teacher should maintain the patience and has to give the corrected version through the repetition of the same sentence in front of the learner. If the teacher stops the learner at the errors created in the foreign language class, the learner will then be timid and will not dare to come forward for answering the questions or discussing their problems. As stated by Littlewood (1984), "It is advisable that teachers be selective in error correction: ignore those errors which do not relate to previously acquired knowledge and avoid correcting the errors if the correction would interfere with the learners' concentration on communication with the benefit for both learners' motivation and more conducive classroom climate." So, the teachers should be well trained to take the classes through the humanistic and social constructivism approach.

CONCLUSION

The humanistic approach along with the social constructivism enriches the learning environment and motivates the learners to work in a team. They follow the curriculum that is prepared as per the suggestions and needs of all the learners. The learners work collaboratively and does not put stress on the teachers for looking into the needs of each learner as now all the learners are working as a team and not in a diversified manner. Their collaborative and active learning reinforce the comprehension, memorization, and production of the foreign language. The acquisition of the foreign language becomes more effective and easier for the learners. The learner is the responsible individual for his learning outcome because he has equally participated as one of the stakeholders in the preparation of the curriculum. Thus, the central position of the learner prepares him for taking the responsibility since the beginning of his learning. The different teaching -learning strategies proposed since years work at one time but at the other moment they are challenged by the other different new method or methodology that has been developed at the expense of the previously existing teaching-learning methods. We found that all the methodologies have been perfect at their own time and have been reused partially later on,

with the newly evolved methodologies, due to their positive results in the learning of some concepts of the foreign language. Widdowson has rightly said that “different approaches to language teaching have tended to emphasize one rather than, and often at the expense of the other.” (1990:157). Thus, the most important point the language teacher has to remember is that the methodologies are created to facilitate the learning and if the teacher feels the need of combining the two methodologies to enhance the learning and support the learner to achieve their goals and needs then they must combine the two methods. The best methodology is the one that makes the learner confident while speaking in the foreign language and he has the competence of reading, writing, listening and speaking in the foreign language.

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POST-HARVEST DETERIORATION OF CASSAVA: A PHYSIOLOGICAL REVIEW AND MITIGATION STRATEGIES

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ABSTRACT

As a major staple food, cassava can be boiled, baked or often fermented into other foods and beverages all over the world. Cassava undergoes postharvest physiological deterioration (PPD) as the tubers are separated from the main plant. PPD is one of the major challenges presently plaguing the agricultural activities of farmers in Nigeria, and thus preventing them from exporting cassava of good and high quality abroad for foreign earning. Cassava can be preserved in various ways such as coating with wax and freezing. Cassava processing affects the nutritional value of cassava roots through modification and losses in nutrients of high value. The processing methods include peeling, boiling, steaming, slicing, grating, soaking or seeping, fermenting, pounding, roasting, pressing, drying, and milling. The products from cassava are: High Quality Cassava Flour (HQCF), cassava chips, garri, starch, Fufu, ethanol etc. The study however recommended that the production of cultivars like B -37 and COB517 that are promising with regards to total carotenoids should be encouraged to improve the nutrition and shelf life of cassava. Also, cultivars like B -42 and NR100216 that have high starch content should also be recommended to farmers for industrial purposes. Above all, genetic manipulation was considered most appropriate to solving the PPD challenge by adding new traits to elite genotypes without altering other desired characteristics.

Key Words: Post-harvest, PPD, cassava, storage, processing, staple food, cultivars, genetic manipulation.

INTRODUCTION

Cassava (*Manihot esculenta* Crantz) is a perennial woody shrub with an edible root, which grows in tropical and subtropical areas of the world. Cassava plays a particularly important role in agriculture in developing countries, especially in sub-Saharan Africa, because it does well on poor soils and with low rainfall, and because it is a perennial crop that can be harvested as required. Cassava is to African peasant farmers what rice is to Asian farmers or wheat and potatoes are to European farmers (El-Sharkawy, 2003).

Undoubtedly, cassava remains a major staple crop in Nigeria, because its product are found in almost every meal consumed in the country. Today, cassava is experiencing a paradigm shift from a mere subsistent crop found on the field of peasant farmers to a commercial crop grown in plantations. This unique development on this crop is attributed to its discovery as a cheap source of edible carbohydrate that could be processed into different forms of human delicacies and animal feeds. For obvious fact, cassava is drought-tolerant, staple food crop grown in tropics and subtropical areas.

Cassava's wide harvesting window allows it to act as a famine reserve and invaluable in managing labour schedules in Nigeria, and also offers flexibility to resource-poor farmers because it serves as either subsistence or a cash crop (Stone, 2002). Additionally, cassava is the source of raw materials for a number of industrial products such as starch, flour and ethanol. The production of cassava is relatively easy as it is tolerant to the biotic and edaphic impediments that hamper the production of other crops. Its roots are used only to store energy, unlike the roots of sweet potato and yam that are reproductive organs. In spite of their agronomic advantages, root crops are far more perishable than the other staple food crops. Once out of the ground, some root crops have a shelf life of only few days. Roots as living organs of plants continue to metabolize and respire after harvest. Cassava has a shelf life that is generally accepted to be of the order of 24 to 48 h after harvest (Andrew, 2002). Its utilization patterns vary considerably in different parts of the world. In Nigeria, the majority of cassava produced (90%) is used for human food (IITA, 2010).

Cassava is very versatile and its derivatives and starch are applicable in many types of products such as foods, confectionery, sweeteners, glues, plywood, textiles, paper, biodegradable products, monosodium glutamate, and drugs. Cassava chips and pellets are used in animal feed and alcohol production. Animal feed and starch production are only minor uses of the crop in Nigeria. Cassava, in its processed form, is a reliable and convenient source of food for tens of millions of rural and urban dwellers in Nigeria (IITA, 2010). Thus, the aim of this study is to review the post-harvest physiological deterioration of cassava in Nigeria.

Post-harvest Handling: The Physiological Deterioration Process

Post-harvest Physiological Deterioration (PPD) is one of the major impediments limiting farmers in Nigeria from exporting cassava and earning foreign cash. It is a complicated phenomenon involving a complex network

of cellular events occurring at the same time in harvested cassava roots. Cassava roots are highly perishable and deteriorate rapidly within 2-3 days of being harvested. The roots cannot be kept or stored satisfactorily for more than 48 to 72 hours at room temperature because they become unfit for human and animal consumption as well as industrial uses.

There are two basic types of post-harvest deterioration. This includes primary physiological deterioration that involves internal discoloration, which is the initial cause of loss of market acceptability and secondary deterioration due to microbial spoilage. The former is understood to be a consequence of tissue damage during harvesting, and in most cases it is seen as a blue-black discoloration of the vascular tissue referred to as vascular streaking. These initial symptoms are followed by a more general discoloration of starch-bearing tissue (Andrew, 2002).

Cassava undergoes postharvest physiological deterioration (PPD) once the tubers are separated from the main plant. The tubers, when damaged, normally respond with a healing mechanism. However, the same mechanism, which involves coumaric acids, initiates about 15 min after damage, and fails to switch off in harvested tubers (Sánchez et al., 2010). It continues until the entire tuber is oxidized and blackened within two to three days after harvest, rendering it unpalatable and useless.

PPD is a major constraint when cassava is processed on an industrial scale or transported to great distances to reach industry and consumers (Westby 2002).

According to a recent estimate by Rudi et al. (2010), extending the shelf life of cassava to several weeks would save \$2.9 billion in financial losses in Nigeria alone over a 20-year period.

Sánchez et al. (2010) identified four different sources of tolerance to Physiological deterioration Process. One comes from Walker's Manihot (*M. walkerae*) of southern Texas in the United States and Tamaulipas in Mexico. A second source was induced by mutagenic levels of gamma rays, which putatively silenced one of the genes involved in Physiological Deterioration Process genesis. A third source was a group of high-carotene clones. The antioxidant properties of carotenoids are postulated to protect the roots from PPD (basically an oxidative process). In the final analysis, tolerance was also observed in a waxy- starch (amylase-free) mutant (Sánchez et al., 2010). This tolerance to Physiological Deterioration Process was thought to be co-segregated with the starch mutation, and is not a pleiotropic effect of the latter (Sánchez et al., 2010).

This article examines current achievements in cassava root PPD tolerance and resistance.

PPD and Cassava Processing Effects on Nutritional Value

Obviously, various studies have confirmed that processing cassava affects the nutritional value of cassava roots through modification and losses in nutrients of high value. Analysis of the nutrient retention for each cassava edible product during field study showed that raw and boiled cassava root keep the majority of high-value nutrients except riboflavin and iron. Gari is arguably a common root product that involves grating, fermenting, and roasting. Gari and products obtained after retting of cassava root with peel are less efficient than boiled root in keeping nutrients of high value but are better than products obtained after retting of cassava roots. However, the latter is richer in riboflavin than sun-dried flour. Fufu (Akpu), which stands out as an important staple in Africa, is a mashed cassava root product that is allowed to ferment with *Lactobacillus* bacteria (Sanni et al., 2002). Medua-me mbong is a root product that requires only boiling and prolonged washing. Though, medua-me-mbong has the poorest nutritional value compared to other cassava products with the exception of calcium content (Julie et al., 2009).

In divergence to boiled cassava, processed root loss a major part of dry matter, carbohydrates, protein, and thus calories. Although raw cassava root contains significant vitamin C, it is very sensitive to heat and easily leaches into water, and therefore almost all of the processing techniques seriously affect its content (Julie et al., 2009). Boiled cassava, gari, and products resulting from retting of cassava root with peel, retain thiamin and niacin better than products obtained after retting of shucked cassava roots, smoked-dried flour, and medua-me-mbong. Riboflavin is well retained in boiled cassava, gari, and smoked-dried cassava flour obtained after retting of cassava root with peel in contrast, the losses of vitamin B2 (riboflavin) (Julie et al., 2009).

Mitigating Strategies for delaying Postharvest Physiological Deterioration (PPD)

Understanding cassava roots' wound response and signaling network is critical for developing techniques to delay PPD and extend the shelf life of fresh cassava roots. However, some Cassava types that respond to PPD are highly encouraged, such as the developed cultivars B-37 and COB517 that are promising in terms of total carotenoids, which increase cassava nutrition and shelf life while also delaying deterioration. In addition, cultivars with high starch content, such as B-42 and NR100216, should be offered to farmers for industrial use.

Also, the most acceptable genetic alteration for solving the PPD dilemma involved the addition of new traits to elite genotypes without affecting other desirable characteristics. Other include the use of numerous basic, low-cost traditional methods such as under-ground storage, wood and cardboard boxes, polybag, and modern procedures such as refrigerated cold storage, freezing, chemical treatments, and wax coating (Ravi et al. 1996)

CONCLUSION

The study discovered that cassava contains much more than starch, and that the nutritional quality of cassava may be improved by generating new types through bio fortification. This means that cassava might be used to make a variety of industrial products, including starch, flour, and ethanol. The production of cassava is relatively easy as it is tolerant to the biotic and edaphic disturbances that impede the production of other Crops. Cassava has a shelf life that is generally accepted to be of the order of 24 to 48 h after harvest. However, prompt post-harvest deterioration means that processing is more important than for any other root crops. Consequently, processing reduces food losses and stabilizes seasonal fluctuations in the supply of the crop, and can equally affect the nutritional value of cassava roots through modification and losses in nutrients of high value. Even as raw cassava root contains significant vitamin C, the study, upon review has revealed that, it is very sensitive to heat and easily leaches into water, thus indicating that almost all of the processing techniques seriously affect its content.

Thus, the study recommends that the production of cultivars like B -37 and COB517 that are promising with regards to total carotenoids should be encouraged to improve the nutrition and shelf life of cassava. Also, cultivars like B -42 and NR100216 that have high starch content should also be recommended to farmers for industrial purposes. While rural farmers should be enlightened on the health benefits of carotene, efforts should be made for such cultivars available and affordable to the rural farmers. In so doing, the PPD agricultural challenge would have reduced. However, genetic manipulation is considered most appropriate to solving the PPD challenge by adding new traits to elite genotypes without altering other desired characteristic

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EVALUATION OF DEVOPS KEY SKILLS OF DEVOPS ENGINEERS - AN EMPIRICAL STUDY.

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ABSTRACT

DevOps skills are crucial for shortening the Development cycles & faster reach to the market. These skills are often continually improved with new emerging trends and changing technologies. DevOps transformations and cloud transformation are happening in the IT industry at a great pace. With changing business priorities, technology advancement in toolchain automation, and DevOps best practices. DevOps Engineers are expected to deliver results very fast. DevOps mindset help combines their skills with relevant knowledge, empowering them to innovate across product and project life cycle. This paper aims to understand and evaluate the DevOps Key Skills of DevOps Engineers. For this study, data for this research were collected through the questionnaire as a data collection tool from DevOps Engineers. Data collected from DevOps Engineers were analyzed with SPSS software version.24. Finally, suggestions for improving the DevOps Skills of DevOps Engineers are suggested for improving efficiencies in DevOps Implementation

Key Words- DevOps, DevOps Engineers, DevOps Skills, DevOps Practices

1. INTRODUCTION

The term “DevOps” typically refers to the collaboration movement that advocates a collaborative working relationship between Development and IT Operations teams. The DevOps during the concept to the cash life cycle of the software helps in reducing the number of steps to expedite faster reach to the market. The focus is on implementing toll chain automation, streamlining the process across the software Development Life cycle. DevOps improves ROI by increasing the speed of releasing new features to the market. DevOps with the help of DevOps Practices toolchain automation increases the quality of deliverables thereby reducing the rework costs. DevOps brings efficiencies in the process and increases customer satisfaction, DevOps significantly reduces the development and operations cost, improves security with a high degree of automation across the software development life cycle. The DevOps Engineer roles within the IT industry are demanding because of changing business priorities and continuously emerging technology trends. the abilities and developed skills by DevOps Engineers to the best are often not enough for them to continue performing great in their DevOps roles. Technology is constantly evolving and fast changing. DevOps transformation is happening at a great speed. With fast-changing business priorities, fast technology advancement, and continuously evolving DevOps tool chain automation Skills. DevOps Engineers are expected to deliver more in a quick time. Increasing emphasis is being placed on continuously improving DevOps skills.

2. DEVOPS SKILLS

DevOps requires DevOps Engineers to follow best practices in their areas and technology. A DevOps engineer should know how to automate and configure an entire DevOps CI/CD pipeline, including workflows, code quality, in-built vulnerability Scanning in CI/CD pipeline, deployment automation, infrastructure as a code provisioning, app performance monitoring, and more. These skill sets are closely linked to the knowledge of DevOps practices, automation, version control, coding, and scripting. Coding, scripting & collaborative development skills are one of the important skillsets that DevOps engineers should possess.

DevOps engineers should collaborate and promote collaboration with different teams. They should respect all the opposite team members. Respectful discussion within and across different teams and being attentive to others’ opinions are very important in DevOps.

Source Code Management best practices ensure version controls are in place. Promotes code quality and avoids code conflicts. Tool Chain automation enables automation across the software development life cycle right from requirement capturing to design, development, test, deployment & operations.

Configuration Management skills bring efficiency in automation and ensure site reliability. Deployment automation ensures artifacts are deployed automatically without any manual hands-off. Depending upon the technology stack different build automation and deployment automation tools are available in the Industry.

Skills related Infrastructure as a code promotes provisioning run time environments, DevOps Engineer with help of configuration management tools can provision run time environments.

Security skills ensure shift left of defects by implementing in build security within DevOps CI/ CD Pipeline. It ensures application code are free from Vulnerabilities.

Coding and Scripting skills help in creating automation scripts that can be integrated with CI/ CD Pipelines. Test Automation skills promote Continuous testing and bring overall efficiency in delivering quality products in a faster time.

Customers are moving to the cloud these days. Depending upon the requirement and need ..They opt for SAAS or IAAS or PAAS Services. Integrating these services with the help of the DevOps cloud native Toolchain is very demanding. An important emphasis is on developing cloud skills for implementing DevOps solutions on cloud.

3. LITERATURE REVIEW

Gene Kim, Kevin Behr, George Spafford, (2013), The Phoenix Project's subtitle is "A Novel About IT, DevOps, and Helping Your Business Win." . This book is a manual for helping IT managers change the way employees think about the way they plan, schedule and complete work.

The Open Group IT4IT Forum Agile Work Group (2016), This document describes the application of the IT4IT Reference Architecture in the industry to the area of Agile using techniques such as DevOps and Kanban. This document explains how to apply the IT4IT Reference Architecture, an Open Group Standard, to various different scenarios related to managing the business of IT.

Rayome, Alison DeNisco (2017), The study carried out by Rayome highlight challenges in DevOps implementation and suggest how to overcome them. Some of the key challenges highlighted in this book are related to existing company culture, test automation, and legacy application, infrastructure.

Duma, Yevhenx (2018), the study reveals 10 DevOps skills required to work in DevOps , Some of key skills that has been given focus are strong communication and collaboration skills, Coding , automatic testing & software Security skills.

Choudhuri, Niladri (2019) The Upskilling 2020 report from DevOps Institute highlights process skills and knowledge as main important skills for DevOps. Governance & Compliance skills have gained focus recently. The study reports Collaboration and cooperation as one of the top skills required in DevOps.

Donnelly, Caroline (2017), This article explains how to build collaboration culture between Development and operations . Tips mentioned in this study include the head-on address to legacy application and infrastructure technology problems and technical debt, the avoiding of being stuck in fire fighting argument cycle, and the need to stop the break-fix-style cycle. Conclusion is to promote collaboration mindset among development and operations team.

Sanjeev Sharma, Bernie Coyne, (2015), This book "DevOps for Dummies" explains DevOps best practices from business-centric approach. The study insist to implement DevOps practices for all organizations that must be agile and lean enough to respond fast to changes such as customer demands, market volatile conditions, competitive pressures, or regulatory requirements.

S.W. Ambler, (2011), The journal focused on "Disciplined Agile Delivery." Elements such as release and deployment should be integral parts of agile vision and daily activities. Conclusion is to focus on Disciplined agile delivery, collaborative DevOps and have DevOps enabled agile delivery model.

Eeles Peter, (2018), The study highlights 30 common problems in DevOps and address how to overcome these challenges. The study advocates application of a practice-based approach for solving the challenging problems.

Savaram Ravindra, (2018), The study highlights 4 top challenges to adopt DevOps and address how to overcome those challenges.

Duma, Yevhenx (2018)), The study reveals ten DevOps skills required to work in DevOps , Some of key skills that has been given focus are strong communication and collaboration skills, Coding , automatic testing & software Security skills.

Choudhuri, Niladri (2019) The Upskilling 2020 report from DevOps Institute highlights process skills and knowledge as main important skills for DevOps. SOD Compliance skills have gained focus recently. The study reports Collaboration and cooperation as one of the top skills required in DevOps.

4. OBJECTIVE

- To understand and evaluate the key DevOps Skills of DevOps Engineers working in DevOps Implementation.
- To offer suggestions for improving DevOps Skills of DevOps Engineers to improve efficiency in DevOps Implementation.

5. RESEARCH METHODOLOGY

Type of research was descriptive, and nature of research was quantitative. Structured questionnaire was used for data collection. DevOps Engineers were asked to evaluate their DevOps Skills. Non-probability Quota sampling technique was used to select the sample for collecting primary data. The source of information and targeted segment for this study were DevOps engineers working on DevOps implementation. The study included 117 respondents for each IT Managers and DevOps engineers and were requested to provide information on DevOps Skills of DevOps Engineers. however, 13 questionnaires were rejected due to incomplete data therefore 104 is the sample size that was taken into consideration.

6. DETERMINATION OF SAMPLE SIZE

Sample size was determined using sample size determination by mean method.

Variables in evaluation of DevOps Skills of DevOps Engineers study were measured using a 5 -point measurement scale, hence the mean method was adopted.

Formula

$$N = \frac{z^2 * s^2}{e^2}$$

Where, 'z' is the standard score associated with confidence level (90% in the current case). Hence standard scores equals to 1.645 (borrowed from normal table)

'S' is the variability in the data set, computed as a ratio of range / 6. Range in this case is equal to 5-1 = 4 (the difference between minimum and maximum value in the 5point scale). 6 refers to ± 3 standard deviation values on the X axis of the standard normal curve, which takes in all the data set in study.

Hence $S = 4/6 = 0.66$

E is the tolerable error = 10% (in the current study).

$$\text{Sample size } n = \frac{1.645^2 * 0.66^2}{0.1^2} = 117$$

117 respondents were requested to provide information; however, 13 questionnaires were rejected due to incomplete data therefore 104 is the sample size that was taken into consideration for teaching.

Final sample size = 104

7. DATA ANALYSIS & INTERPRETATION

DevOps Engineers working in DevOps implementation were requested to rate their DevOps Skills. Frequency descriptive statistics for DevOps Skills measuring level of expertise of DevOps Engineers were observed for 8 DevOps Skills

They were further asked to rate each DevOps skills using 5-point Scale

1. Fundamental Awareness (basic knowledge of Skills)
2. Novice (limited experience of Skills)
3. Intermediate (practical application of Skills)
4. Advanced (applied theory of Skills)
5. Expert (recognized authority of Skills)

Evaluation of DevOps Engineers on DevOps Skills.

| Skills | Description | Fundamental Awareness | | Novice | | Intermediate | | Advanced | | Expert | | Mean | Std. Dev | Total | |
|--------|-------------|-----------------------|---|--------|---|--------------|---|----------|---|--------|---|------|----------|-------|---|
| | | F | % | F | % | F | % | F | % | F | % | | | F | % |

| | | | | | | | | | | | | | | | |
|------|------------------------------------|---|---|---|---|-----|------|----|------|---|-----|------|------|-----|-----|
| DS 1 | Collaborative Development | 0 | 0 | 0 | 0 | 89 | 85.5 | 15 | 14.5 | 0 | 0 | 3.13 | .343 | 104 | 100 |
| DS 2 | Build & Deployment Automation | 0 | 0 | 0 | 0 | 85 | 81.7 | 11 | 10.6 | 8 | 7.7 | 3.26 | .591 | 104 | 100 |
| DS 3 | Source Code Management | 0 | 0 | 0 | 0 | 97 | 93.3 | 7 | 6.7 | 0 | 0 | 3.07 | .252 | 104 | 100 |
| DS 4 | Coding & Scripting | 0 | 0 | 0 | 0 | 99 | 95.1 | 5 | 4.9 | 0 | 0 | 3.02 | .138 | 104 | 100 |
| DS 5 | Continuous Security | 0 | 0 | 0 | 0 | 102 | 98.1 | 2 | 1.9 | 0 | 0 | 3.02 | .138 | 104 | 100 |
| DS 6 | Configuration Management | 0 | 0 | 0 | 0 | 95 | 91.3 | 9 | 8.7 | 0 | 0 | 3.09 | .283 | 104 | 100 |
| DS 7 | Infrastructure Provisioning Skills | 0 | 0 | 0 | 0 | 90 | 86.5 | 14 | 13.5 | 0 | 0 | 3.13 | .343 | 104 | 100 |
| DS 8 | Cloud Skills | 0 | 0 | 0 | 0 | 100 | 96.1 | 4 | 3.9 | 0 | 0 | 3.03 | .168 | 104 | 100 |

Interpretation

The above frequency distribution table states that for Collaborative Development 85.5% are at Intermediate state, 14.5% are at advanced state. Hence most of them are at intermediate state for Collaborative Development.

For Build & Deployment Automation, 81.7% are at Intermediate state, 10.6% are at advanced state and 7.7% are at expert state. Hence most of them are at intermediate state for Build and Deployment Automation.

For Source Code Management 93.3% are at Intermediate state and 6.7% are at advanced state. Hence most of them are at intermediate state for Source Code Management.

For Coding & Scripting 95.1% are at Intermediate state and 4.9% are at advanced state. Hence most of them are at intermediate state for Coding & Scripting.

For Continuous Security Skills 98.1% are at Intermediate state and 1.9% are at advanced state. Hence most of them are at intermediate state for Continuous Security Skills.

For configuration management 91.3% are at Intermediate state, 8.7% are at advanced state and 3.09% at expert state. Hence most of them are at intermediate state for configuration management.

For Infrastructure Provisioning skills 86.5% are at Intermediate state, 13.5% are at advanced state and 3.13% at expert state. Hence most of them are at intermediate state for Infrastructure provisioning.

For Cloud Skills 96.1% are at Intermediate state & 3.9% are at advanced state and . Hence most of them are at intermediate state for cloud skills.

CONCLUSION.

The conclusion of the data analysis for evaluating DevOps Skills of DevOps Engineers working in DevOps implementation are as follows

From the above Table 1, it is observed that for 8 DevOps Skills. Most of the respondents are at Intermediate levels and it can be concluded that for overall DevOps Skills. DevOps Engineers are at Intermediate Level and there is scope for improving DevOps skills from Intermediate level to advanced and expert level.

8. SUGGESTIONS

- With Technology changing very fast these days. DevOps Engineers need to keep up with the pace by continuously learning new things. DevOps Engineers should develop a habit of developing new skills and technical knowledge about DevOps ecosystem
- DevOps & Agile go complementary to each other. DevOps Engineers should develop skills in working in Agile Environment. They should be trained on tools used for Agile Project Management so that can use that tool effectively from an Agile Scrum Management perspective.
- DevOps Engineers need to develop efficacy in Cloud. With Cloud Adoption happening at a great pace. Customers are moving to the cloud and using computing on Cloud and consuming PAAS, SAAS, and IAAS Services. DevOps Engineers should develop cloud-native DevOps skills in deploying changes to cloud.

- DevOps Engineers should undergo specialized training to get an overall understanding of the Organizational and Operational Model of DevOps. This will help them to plan and adapt to the Organizational technological needs.
- It is advised DevOps Engineers should have a good understanding of DevOps best practices. This will help them to identify any capability gaps existing within them and work towards closing them.
- Effective collaboration is key to success for any DevOps Implementation. DevOps engineer works in small batches via sprints so that others can do their work more easily. For More effective collaboration across cross tower teams, DevOps Engineers should be trained on collaboration tools used for project Management, Team Management, Task Management, Communication, and Document Management within the organization.
- It is advised that DevOps Engineers should develop skills in infrastructure automation tools. A DevOps engineer must possess the capability to implement automation technologies and tools at any level across the software development life cycle.
- DevOps engineers should be trained on implementing security across CI/CD pipelines. They must be able to write secure code to protect applications from Vulnerability attacks and promote shift left of defects.
- DevOps engineers should have a very good understanding of effective source code management practices. different branching strategies and version control tool to avoid source code conflicts and promote quality deliverables.
- DevOps Engineers should be adaptable and flexible for handling multiple requests diligently.
- DevOps Engineer should have a good overall understanding of DevOps process and tools spreading across source control tools, Continuous integration tools, Infrastructure provisioning tools, Deployment Automation tools, Container orchestration tools, Cloud Native DevOps tools.

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**FAMILY AND SELF-ESTEEM IN COPING WITH BULLYING: A STUDY OF LUCY
MONTGOMERY'S *ANNE OF THE GREEN GABLES***

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ABSTRACT

The experiences children have in early childhood influence their capacity to learn and interact with others, and to respond to everyday stresses and challenges. The child's environment and interactions can promote or hinder the formation of the personality where self-esteem is developed. At this time, parents can play a prominent role in seeking out opportunities to enhance children's empowerment and create strategies to address challenges they encounter in their daily life. One of these challenges is bullying and harassment of peers. The current study is concerned with examining and studying bullying aggression in the light of two theories: the ecological system and self-esteem theory. It demonstrates how the role of family and environment help bully victims to cope with this troubling challenge and how this role can increase their self-esteem and consequently affect their ability of facing bullying. To achieve this aim the study has selected Lucy Maud Montgomery's novel Anne of Green Gables, in which ecology and self-esteem has reflected a prominent effect on the main character's ability to overcome the bad phenomenon of bullying. The study relies on these approaches to carry out the analysis of the novel.

Keywords: Bullying, Ecology, Self-esteem, Anne of Green Gables.

1.1. INTRODUCTION

Bullying has been widely sprayed in all aspect of society especially in the few recent years. Schools are one of the most obvious places that bullying takes place in. It is a widespread phenomenon nowadays and considered a personal and social problem that poisons and harms the life of rage of individuals. Generally, it affects the school's atmosphere in a passive way, and especially the students' feelings and social life, which in turn influence their right of having a healthy learning environment. One is able to reach effective learning only by having a safe healthy climate which supplies students with psychological integrity and security from violence, danger, and threat. Great attention has been given to the bullying phenomenon by researchers and academic learners all over the world because of its serious consequences on the readjustment and mental health of the individuals as well as its impact on the school climate in a total way (Almahasni 243). Moreover, bullying has a negative impact on the individuals; it restrains their usual performance at school, their psychological and sentimental development, particularly the socialization operation inside the school which is an essential source of safety.

Despite the fact that bullied students are more likely to face the problems that are aforementioned, but some of them do not suffer or let bullying disturb their life. People who present positive developmental results regardless of bullying pressure are indicated as "resilient". Few pieces of researches deal with resilience and they show that 12–22% of students or grownups who were bullied as children demonstrate preferable results than expected according to their experiments with abuse. (Sapouna and Wolke 998)

1.2. THEORETICAL FRAMEWORK

2.2.1. The Ecological System Theory

Ecological theory anticipates that environmental atmospheres have an effect on human development, and person's behavior will be formed by the mutual associations between individuals and the environment. The ecological theory aims to show human interaction from the viewpoint of systems or subsystems (Analisah and Indartono 239). There are four systems in this theory that outspread from individual contact with the impact of wide culture. Bronfenbrenner named these systems as a microsystem, mesosystem, ecosystem, macrosystems. According to Bronfenbrenner, these four systems interrelated in a definite order just "like a set of Russian dolls" (4).

The microsystem is seen as the shape of actions, roles, and interpersonal relationships lived by a person at the stage of growth in a specific setting with specific naturalistic, material characteristics and including other persons with peculiar features of mood, individuality, and order of faith (Johnson 2). The child's development gets its first direct affection from the units of this system that are family, friends, neighborhood, and classroom (Ahuja).

Mesosystem is the interaction of two or more settings where the first individual takes part actively (for a child, the interaction between home, school, neighborhood peer groups; for grown-up people, the interactions are

between family, work, and social life). It is created and expanded when the growing individual walks to a new environment. (Bronfenbrenner 25).

The level of exosystem represents the wider social system where the child does not labor in a direct way. The forms in this level affect the growth of the child through interactions with several contexts in its microsystem. For example, tables of parent's workplace or society-based family exchequers. Although the involvement of the child might not be direct, he can feel positive or negative imposes implicated within this system (Paquette and Ryan 2).

Macrosystem is the reflection of beliefs, principles, and norms in the cultural and spiritual socioeconomic associations of the community. The macrosystem affects growing inside and between the other systems and works as a strainer or lens that through individual translates future experience through it. Research on macrosystem gives an understanding for some of the participations; it shows the reason of the disparity for activity between individuals in the same activity (Ettetal and Mahoney 5).

2.2.2. Self-Esteem Concept

The esteem concept has first appeared with Maslow's introduction to the hierarchy of needs in his paper "A Theory of Human Motivation" in 1943. This hierarchy proposes that people are driven to achieve the primary needs before going on to other, more sophisticated needs (Susman). There are five levels of needs in Maslow's hierarchy starting from the bottom with the Physiological Needs which is simply is the need for food water, and breathing; at the second level, he sets Homeostasis which is the need for security and safety; Social Needs are set on the third level. Esteem is placed at the fourth need where Maslow emphasizes the urgent need for appreciation and respect; Self-Actualization is placed on the top of Maslow's hierarchy. In this hierarch, Maslow has hypothesized that gaining psychological health is possible if these needs are well satisfied. As long as these needs are not satisfied, the individual's psychology will be more disturbed (Lester et al. 83).

According to Maslow, the esteem needs start to take a more prominent part in motivating behavior. At this level, it becomes more and more important to obtain respect and appreciation from others. People possess a need to accomplish things then get their efforts admitted and praised. In addition to that, esteem needs implicate things like self-esteem and personal worth. Individuals need to feel that they are appreciated by others and sense that they are doing a contribution to the world (cherry).

The popular link of self-esteem with psychology has widely spread with Rosenberg's large-scale survey of teenagers in 1965 and linked it with anxiety and depression. Other researchers like Coopersmith and Branden have made good links between self-esteem and self-trust, educational achievement, and mental health. The following years have seen progress and dominance of what is called the 'self-esteem movement' in the Western community, which has concentrated on the concept that raising individuals' (mostly children's) self-esteem can make them happier, and more successful (Hepper 80). It has been frequently stated in past researches that global self-esteem is related to psychological welfare. It has been proved that there is a reverse association between self-esteem and depression. All the studies that have been made on different ages show the same results. A study of 2,300 by Pearlin and Lieberman (1979) has shown a connection between self-esteem and depression. The same results have appeared in Kaplan and Pokorny (1969) as well as Simmons and Rosenberg (1972). In fact, self-esteem and depression can be influenced by each other. It seems that depression has a greater effect on self-esteem than self-esteem on depression (Rosenberg et al. 145- 146). Thus, self-esteem rises in reaction to positive feedback and social approval and falls in reaction to negative feedback and social refusal. It is usually connected to the self-conscious emotions' experiments like pride, embarrassment, or shame (Hepper 85).

Obviously, self-esteem can be defined as the sight of the person to himself/herself and how much he/she estimates oneself and how this can be reflected on his psychological health and performance. So according to Rosenberg, self-esteem is the positive evaluation of the individual's self and the amount of respect to himself/herself (Abdel-Khalek 2). From the explanation above one can see that there is a direct link among self-esteem, ecology, and bullying.

1.3 DISCUSSION

Lucy Maud Montgomery's *Ann of Green Gables* is one of the most read novels that have interested successive generations since its publication in 1908. Although it has been over a hundred years since the beautiful Anne Shirley has become known, she is still widely loved by children and adults (Paskin). Lots of critics view this novel as an autobiographical novel due to the similarity of the author's childhood with Anne's childhood. Montgomery lived her childhood with her grandparents in a place that is so typical of the setting of the novel (Drain 63).

Lucy Montgomery opens her novel with a delightful detailing description of nature from the window of the curious old lady Mrs. Rachel Lynde who lives near Cuthbert's house where the main setting of the novel. Mrs. Lynde watches people from her window to satisfy her curiosity which has been increased by seeing Matthew Cuthbert, the shyest man driving to go out of Avonlea. Montgomery gives a fine description to the setting, which is one of the elements that has contributed so much to the fame reputation of the novel; Reimer said "I won't conjecture why books that were popular contemporaries of *Anne of Green Gables*, the *Pollyanna* books by Eleanor H Porter, for example, have not lasted, but I will suggest one reason that *Anne of Green Gables* has; and that reason is Montgomery's superb use of setting" (57).

It does not take Mrs. Lynde so long to get there to know from Marilla, Matthew Cuthbert's sister, the reason behind Matthew's departure out of the village. Marilla whose description of her appearance indicates her sharp, district personality tells Mrs. Lynde that they are going to adopt a boy from an orphan asylum in order to help Matthew at the farm. At the moment of hearing such news, Mrs. Lynde shows a big surprise advising Marilla not to do so. She even warns Marilla by mentioning a few incidents that she has read in the paper for adopted boys from the orphan asylum.

Opening the novel with Marilla and Mrs. Lynde's discussion, the writer shows us the nature of this small community and how it is hard for outsiders to be accepted into; Susan Drain states that "Anne presents a vision of the relation between community and individual which is complex as well as close, challenging as well as comfortable" (16).

While Marilla is awaiting a boy, the surprise comes to Matthew first; the child who is waiting at the train station is a girl. After the description that is given to Matthew, "Matthew dreaded all women except Marilla and Mrs. Rachel; he had an uncomfortable feeling that the mysterious creatures were secretly laughing at him" (Montgomery 24). One can expect that he will leave the little girl and go back to green gables. Here comes the real surprise that Matthew takes the girl with him home. Montgomery gives two descriptions to this little girl "Anne"; the first description is for her physical appearance that can be seen by an ordinary observer and the second description can be seen only by an extraordinary observer which expresses Anne's spiritual character. In spite of his confusion, Matthew is so kind person who is not able to break the child's heart by telling her that he is expecting a boy kid not a girl he even apologizes to her for being late, he says "I'm sorry I was late" (Montgomery 18).

Along the drive to the green gables, Anne keeps on talking with Matthew telling him how hard to live in the asylum because there is no "scope for imagination" (Montgomery 19). Anne's describing herself as "dreadful thin" and her wish to be plump shows that she has low self-esteem of her external appearance. As they reach the buggy nothing can stop her from talking except the beautiful nature of Avonlea. Nature which most of Montgomery's heroines have a connection with is a mutual and vital connection that freshen the spirit and arouses it. In this novel, nature is noticed and valued when Montgomery has used metaphors to strengthen "[her] harmonious implied inspiration that the nature is a conscious and reacting force" (Epperly 89-90).

At the moment of their arrival home, Marilla is so surprised to see a girl with Matthew, not a boy. Knowing that she is not the wanted child Anne purses into a continuous cry. Facing this bitter truth, Anne tries so hard to prevent herself from forming any connection to the place. She even resists going out for playing. Anne is not rebellious as she does not have a struggle with the society where she lives. She does not have the desire to make her readers antisocial sympathies. The only thing that Anne wants is acceptance. Anne is not an ordinary kid, her imagination is easily noticed by anyone who sees her and talks to her for little time. She keeps on assuring that she needs a "scope of imagination". Flawlessly one can identify Anne from the other characters because of her mental agility (Berg 125). Nawal F. Abbas (2013) states, that "Anne's talkativeness and spirit charm Matthew" (Abbas 3) and made him hold his mind to keep Anne. When Mathew asks Marilla to keep Anne, she agrees, and Anne becomes the happiest child on earth and promises to be so good. The journey of bringing up Anne begins and Marilla starts to teach her how to behave and to be ladylike.

With her first visit to the Cuthbert's house after Anne's coming, Mrs. Rachel (one of the green gables' neighbors), is impressed negatively by the external looks of Anne and tries to undermine her self-esteem, "she's terrible skinny and homely, Marilla. Come here, child, and let me have a look at you. Lawful heart, did anyone ever see such freckles? And hair as red as carrots! Come here, child, I say" (Montgomery 83). Mrs. Rachel's words have outraged Anne and made her furious; although Anne herself is unsatisfied with her look, she hates it when people criticize her hair or anything about her look. With a scarlet face, Anne stands in front of Mrs. Rachel and tells her "I hate you" (Montgomery 83), and she bursts in her face. Ida Martinsson (2021), states that "This reaction was not expected, by either Lynde or Marilla, as Anne breaks all rules of decorum and of proper

ladylike behavior" (14). She goes to her room with tears in her eyes. Although Marilla asks Anne to apologize to Mrs. Rachel, she tells Mrs. her that "you shouldn't have twitted her about her looks, Rachel." (Montgomery 84).

This incident makes Marilla realize that criticizing Anne's physical appearance is a sensitive point to Anne and causes her deep harm and sorrow. But that does not prevent her from punishing Anne by staying in the Green Gable until she apologizes to Mrs. Rachel, yet she refuses to do. Anne is determined not to apologize to her because she does not feel sorry for what she has said; but when Mathew visits her in her room and talks to her, "well now, of course I do. It's terrible lonesome downstairs without you. Just go and smooth things over—that's a good girl." (Montgomery 91), Anne directly decides to apologize. It might be the first time that someone shows her that she is important and her existence means something to him that he feels lonely without her. The main reason behind Anne's apology is her feeling that she is a loving and important person. It is not Anne who gets this feeling of warmth. Marilla, although does not show it, also has experienced this feeling when Anne has slipped her hand into Marilla's balm for the first time. "Anne not only awakens Marilla's imagination but she goes on to awaken other dormant feelings as well" (Berg 126). After settling in the Green Gables, Anne's ecology system has totally changed and she starts to feel safe as she knows that "It's lovely to be going home and know it's home," (Montgomery 97). It is the first time that Anne feels that she has a home and she loves this feeling of belongingness so much.

On her first day in Sunday school, Anne goes alone because Marilla has a dreadful headache. Anne does her best to look familiar to the folks of Avonlea so she decorates her hat with wildflowers and ironically, this wish to fit in has merely confirmed her difference (Mcquillan and Pfeiffer 22). People of Avonlea start to talk about Anne's hat and Mrs. Rachel tells Marilla immediately that makes Marilla angry with Anne but as soon as watching the tears in the child's eyes Marilla changes the subject to something that can excite and cheer Anne up, Diana has come home and Anne can visit her. Anne is so excited and anxious at the same time. She eagerly wants Diana to become her bosom friend, but she is afraid that Diana will not like her. It is obvious that "Anne's anxiety to meet a real friend is understandable because she never makes any real friendship before and nobody teaches her to" (Az-Zahra and Saktiningrum 123). Diana has been described as a pretty girl with black eyes and black hair as well as rosy cheeks. Anne and Diana become best friends, or as Anne called it, bosom friends. On their way home, Anne admits to Marilla "Oh Marilla, I'm the happiest girl on Prince Edward Island this very moment." (Montgomery 111).

In a few days Anne's ecological system has totally changed, It has become warmer, nicer, and above all safer than before, now she has two people who want her around in a place that she can call it home, a place that she belongs to; in addition, she gets a perfect bosom friend that she has always dreamed of. Marilla on the other side is also testing the joy of having a kid around when she accepts Anne's request to join the Sunday school picnic and tells Anne that she is going to bake her basket to take with her Anne kisses. Marilla and "she {were} secretly vastly pleased" (Montgomery 116). This joy has been interrupted by the incident of the "amethyst brooch" of Marilla which has been lost. She has accused Anne of this loss and prevented her from going to the picnic until she confesses her fault. Anne's desire to go to this picnic leads her to make a false confession. Marilla knows that she is not responsible for losing the brooch, and she educates her about her false confession, at the end, she forgives Anne because she knows that she is the one who shoves Anne to that confession. Marilla rectifies her fault and sends Anne to the picnic. The amethyst is one of the preferable precious stones of fiction. It usually holds off the illusion. The amethyst's holder is not misled and retains a clear head and spirit, although the amethyst at the same time may be the carrier of fictional imagery. When amethyst has been lost, Marilla loses the sense of reality in accusing Anne, after that she recovers her sense when the stone is restored (Barry et al. 33).

Marilla tells Anne that she should start school. Matthew and Marilla plan to give Anne a good education which she couldn't have if she stayed in the orphans' asylum. As Anne goes with her friend Diana, she makes many friendships with her schoolmates and she has even got her first compliment about her nose from one of the schoolgirls. Everything goes smoothly in the school till the coming of Gilbert Blythe to school. Although no previous study points that he is a bully, yet Daina's description of him can easily judge him as aggressive and harasser. "He's AW'FLY handsome, Anne. And he teases the girls something terrible. He just torments our lives out." (Montgomery 137). But it sounds that the girls do not mind being bullied by a handsome boy the author comments on Diana's speech; "Diana's voice indicated that she rather liked having her life tormented out than not." (Montgomery 137).

Gilbert has the self-confidence that a bully usually enjoys; this confidence comes from his good-looking and his good school performance which has put him ahead of others. The first time Anne has seen him, he was bullying

one of the class girls by pulling her hair. Anne has already acknowledged that he has bullied a girl for having freckles. So she decides to ignore him, this strategy can be an indication of weak self-confidence, that Anne unconsciously hides to look stronger than she really is (Rothman 5). Gilbert does not like to be ignored. He is not used to be ignored by any girl of Avonlea and he tries to have her attention but in vain. In the afternoon Gilbert has done the most provoking act to Anne that is making fun of her hair by pulling it and calling her "carrots". Anne's appearance has been always a sensitive issue to her. Anne's anger has been evoked for the second time in the novel for the same reason "making fun of her appearance". The author explains the incident "Anne had brought her slate down on Gilbert's head and cracked it" (Montgomery 140). Although Gilbert has admitted his fault, Mr. Phillips decides to punish Anne for her temper. He made her stand on the platform for the rest of the day. Gilbert has apologized to Anne, but she refuses his apology. Diana explains to Anne that, "You mustn't mind Gilbert making fun of your hair," she said soothingly. "Why, he makes fun of all the girls. He laughs at mine because it's so black. He's called me a crow a dozen times; and I never heard him apologize for anything before, either." (Montgomery 142).

It is true that Anne's personality is strong and has a "forceful personality and ambition are powerful and non-stereotypical" (Mcquillan and Pfeiffer 30), but Anne hates her hair the most, she does not mind her freckles. Her dislike of hair is intensified by Gilbert's act of bullying her, and that's why she refuses his apology. Anne for a long time in the novel keeps on reminding herself of what Gilbert has said to her.

While Anne's reaction to Josie Pye, who is "a potential bully who has sharp words in her mouth. She always tries to make people get down and it annoys Anne" (Mcquillan and Pfeiffer 30) is not as angry as with Gilbert and Mrs. Rachel because Josie does not bully her about her look. Anne has been bullied many times by Josie and she almost dies by Josie's challenge and Anne blames herself for this incident, she does not ignore Josie as she does with Gilbert. It may be seen as a contrasted act of Anne's reaction to Gilbert and Josie but the difference is that Anne's feelings are hurt more than her body.

On the day that follows the slate incident, Anne is chosen from a punch of late students by Mr. Phillips to punish her for he does not want to disturb himself by punishing "a dozen pupils". Anne's punishment has been to sit with Gilbert in the class. At this instant, Anne has a feeling of insult. Although there are a dozen guilty students, she is the only one to be punished and as if it is not bad enough to sit with a boy, this boy is Gilbert, her bully whom she does not look at. After school, Anne makes a strict decision which is to depart school and study at home. This has shocked Marilla who doesn't know what to do in front of Anne's determinations. Marilla does not like to ask others for advice, but this time when it comes to Anne's benefit she asks Mrs. Rachel what to do (as she has many daughters and she knows how to deal with girls). Her behavior is a turning point in Anne's life, success, and relationships. When she leaves Anne to stay at home and does not force her to go back to school until Anne herself decides to go to school this makes Anne "see herself as part of a larger whole — a family" (Clement 62) who respects her and gives her support. Anne's rejection of going to school is caused as a result of being bullied. Hence, the bullying act may contribute to forbidding many students from attending schools.

Marilla does all the duties of a 19th-century mother to Anne. She teaches her religious values, chores, cooking and provides her education and protection. The relationship between her and Anne is considered as a friendship more than a mother-daughter. Marilla does not possess the features of the dominant mother that applies her ferocious authority. In spite of the sharp words that she uses, Anne takes those words more like advice than orders (Kim 39). Marilla, who deals with a child for the first time, does not have the ability to express emotions directly, but dealing with a spontaneous kid like Anne makes her learn to express these emotions little by little. With the raspberry cordial juice incident, Anne is prevented from seeing Diana because Mrs. Barry believes that Anne set Diana drunk on purpose and she doesn't accept Anne's apology. Anne's heart is broken for the loss of her "bosom friend" and she keeps on crying, when Marilla goes to the east of the gable to check on Anne she expresses her sympathy towards Anne "Poor little soul," she murmured, lifting a loose curl of hair from the child's tear-stained face. Then she bent down and kissed the flushed cheek on the pillow." (Montgomery 165).

With the pass of time, Marilla's love for Anne grows and it reflects on her action more than her words. She and Anne's relationship is the major most complicated relationship in the whole novel that even Anne's relationship with Matthew and Diana depends on it. This relationship has structured upon the author's own interrelation with her grandmother. Anne has a strong connection with Marilla; she tells her everything. Anne has become an essential person in the sibling's life as well as they are in her life.

Anne gets all the kindness of Matthew; he tries his best to see his little girl happy. He insists on puffed sleeves when he notices that Anne's clothes are different from other girls, "he was free to, 'spoil Anne_ Marilla's

phrasing "as much as he liked" (Montgomery 244). He likes to see the smile on the child who brings spirit to their dull house. Anne knows and appreciates this attention; for her, Matthew is one of the "kindred spirits" in her life. Every act of him gives warmth to her heart, "I'm quite content to be Anne of Green Gables, with my string of pearl beads. I know Matthew gave me as much love with them as ever went with Madame the Pink Lady's jewels" (Montgomery 344). Anne can't be what she is on without the emotional and financial support that she gets from Matthew and Marilla. Marilla has guided Anne to be more self-disciplined and to control her anger.

Anne's ecology system has affected her and turned to be a better person in spite of the negative cases, abuses, and bullying in her life. Her self-esteem rises and she starts to accept her appearance, she does not surrender to the destructive feelings. Each time she faces a problem, there is someone to hold her up. It is not only her close ecology but there is her friend Diana, her teachers that she respects and loves, for example, Mrs. Allan (the new minister's wife) who is intelligent, kind, and independent, she chooses to work in spite of the position of her husband. Mrs. Allan makes a connection with all the students, encourages, and gives them positive energy. Mrs. Allan becomes the role model for Anne. One can conclude the reason behind Anne's idolization of her and why she is inspired by her. It is not only because of Mrs. Allan's ability to take Anne's heart and attention but because of Anne's feelings that they have many similarities. Anne and Mrs. Allan are seen as people that are completely different from the community of Avonlea. It is unusual to find somebody with a spark of imagination such as Anne, and Anne also feels dissimilar for being an adopted orphan that is brought to Avonlea. Mrs. Allan is also seen different for her sense of fashion, and because of breaking the traditional rule of behavior of a minister's wife (Az-Zahra and Saktiningrum 130).

It is not only Mrs. Allan plays an effective role in Anne's life, but also there is Miss. Stacey who is described in the novel as "a bright, sympathetic young woman with the happy gift of winning and holding the affections of her pupils and bringing out the best that was in them mentally and morally." (Montgomery 240). Miss. Stacey supports her students and creates a suitable environment for them to glow. There is a huge difference between Miss. Stacey's treatment of the student and Mr. Phillips' treatment, the previous teacher of Avonlea School. When Anne commits a mistake in Mr. Phillip's class, she is punished in front of the whole class, but at Miss. Stacey's class, Anne is left until recess, and Miss. Stacey explains to Anne her fault, this explanation makes Anne realize her fault and she tries to correct it.

In *Anne of the Green Gables*, one can observe that the author has made a balance and harmony between Anne's life and people surrounding her, distributing the roles of teacher, preacher, and warm loving parent to more than one character; besides Marilla, those characters are Miss. Stacey, Mrs. Allan, and Matthew. This way of distribution makes the pressure of the heavy responsibilities less on the mother's shoulders. When Montgomery gives other characters roles in Anne's education and life, she displays that the responsibility of the child does not lie on the shoulders of a mother only, but it is a corporate responsibility of the community, mother, and other members of the family (Kim 41).

Anne shows that the personality of a child is affected by the members of each system of his/her ecology and by the interaction between these systems. Anne has found love, security, and support in each environment, and that enabled her to conquer the challenging situations that cause her many struggles and troubles. Anne has not accepted her appearance at the beginning of the novel, but when she sees that lots of people accept her and express their admiration to her, she eventually accepts herself which makes her a self-confident and strong girl, and that leads to her success. Even after the death of Matthew, Marilla knows that Matthew's emotional actions towards Anne is enough and she has to be strict to guide Anne to the right behavior, but at the first situation after Matthew's death, Marilla shows her real emotions to Anne and tells her;

Oh, Anne, I know I've been kind of strict and harsh with you maybe—but you mustn't think I didn't love you as well as Matthew did, for all that. I want to tell you now when I can. It's never been easy for me to say things out of my heart, but at times like this it's easier. I love you as dear as if you were my own flesh and blood and you've been my joy and comfort ever since you came to Green Gables. (Montgomery 371)

In the light of (ecological systems and Self-esteem concept) and throughout looking at Anne's journey and her transformation from a little orphan with no obvious future into a little woman who has finished her study to become a teacher, it can be found out that this transformation is related to the environment that she has lived in. Anne's transition from an unhealthy environment which is the orphanage into a much healthier environment has affected her in a very positive way. Finding safety and a warm place with a loving family has given her the courage to accept her appearance and not let others affect her look to herself and that has raised her self-esteem which gives her the capacity to face bullies. Larry K. Brendtro has stated that "positive youth development

requires caring parents, supportive teachers, and positive peers" (163). At the end of the novel, Anne becomes able to control her anger and decides to forgive her bullies.

1.4 CONCLUSION

In Montgomery's *Anne of The Green Gables*, Anne the eleventh years girl has suffered from people's abuse and bullying because of her red hair and her appearance, but moving from an orphanage and having a home with a loving family enables her to build her shaken confidence t and rises her self-esteem which gives her the power to face her bullies. Moreover, the love, support, and guide of her new family make her content with her appearance and see the beauty of her red hair. Finally, this new life gives Anne the courage she needs to find inner peace and reconciliation which makes her forgive her bullies.

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IMPACT OF CAPITAL STRUCTURE ON FINANCIAL PERFORMANCE: A STUDY OF SELECTED TELECOMMUNICATION COMPANIES IN INDIA

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ABSTRACT

This study aims to establish the various capital structure variables of selected three Telecommunication Companies namely, City online services limited, HCL Comnet Systems & Services Ltd, Sify Technologies Ltd. The study is based on secondary source of data and has been obtained from PROWESS database maintained by Centre for Monitoring Indian Economy (CMIE) for the period of five financial year from 2015-16 to 2019-20. Debt Equity ratio taken as dependent variable whereas Net Profit Margin, Operating Profit Margin, Return on Assets, Return on Capital Employed and Return on Net Worth are taken as independent variable for the study. The result of the study shows Net Profit Margin has negative and very significant relationship with debt equity whereas Operating Profit Margin has Positive and very significant association with debt equity.

KEY WORDS: Capital Structure, Profitability, Telecommunication Companies, Debt-Equity Ratio

INTRODUCTION

A company's financing decision or capital structure decision is concerned with the sources of funds from where long-term finance is raised and the proportion in which the total amount is raised using these sources of funds. Capital structure decision is concerned with the sources of long-term funds such as debt and equity capital. Capital structure is defined as the mix of various long-term sources of funds broadly classified as debt and equity. Hence capital structure is also referred to as 'Debt Equity Mix' of a company.

Hence capital structure of a company is the composition of debt and equity capital in total capitalization of the company. Debt and equity capital differ in terms of costs and risks. From the viewpoint of the company raising funds, debt is considered to be a cheaper source than equity capital. However, debt also increases the financial risk of the company and may be responsible for increase in cost of equity.

The present study aims to find out relationship between different variables of capital structure and profitability of Telecommunication Companies in India.

LITERATURE REVIEW

Pradeepta Sethi and Ranjit Tiwari (2016) investigated the factors of capital structure and leverage. The study consisted 1077 firms for the period from 2000-01 to 2012-13. Profitability, size, growth, tangibility, non-debt tax shield, uniqueness, and signal were used as factors of capital structure. They used ordinary least square to check the association between leverage and capital structure factors. The study found capital structure can affect through factors like, profitability, size, growth, tangibility, uniqueness, signal and non-debt tax.

MerveGizemCevheroglu- Acar (2018) analysed factors of capital structure by considering 111 non-financial firms in Turkey for the period of eight years from 2009 to 2016. To evaluate capital structure factors, study used leverage as dependent variable while profitability, growth, non-debt tax shield, size, tangibility, volatility and liquidity were taken into consideration as an independent variable. The required data and information for the study were gathered from published financial statements and applied panel methodology. The study concluded that profitability, non-debt tax shield, size, tangibility, and liquidity had significant relationship with leverage while growth and volatility had not significantly related with leverage. The outcomes of the study are compatible with pecking order theory.

Sandip Sinha and Pradip Kr. Samanta (2014) examined the factors of capital structure affecting on cement industry. The study consisted a sample of twenty-two Indian cement companies listed on National stock exchange for the study purpose from 2007-08 to 2011-12. Regression analysis were used to examine the effect of the independent variables (Firm size, Tangibility, Non-debt tax shield, Profitability, growth opportunities, Business risk, liquidity, and firm age) on dependent variable (Quasi market value of debt-to-equity ratio). The required data and information for the study were gathered from published annual reports. The study found positive association between tangibility, firm size, non-debt tax shield, business risk and leverage whereas leverage had negative association with profitability, growth opportunities and age.

M. A. Suresh Kumar, M. Dhanasekaram, S. Sandhya, R. Saravanan (2012) investigated the impact of financial ratios, capital market variables, tax rate and interest rate on capital structure of fifteen Indian insurance

companies. The study had made use of multiple regression and simple regression model to test hypothesis. The hypothesis of the study states that there was significant relationship between firm size and fixed assets on capital structure. It also implies that there was positive relationship between profitability ratios and growth rate of profits on capital structure. The study suggested that insurance sector companies had to consider the financial indicators of capital market because it reduces the cost of capital which in turn leads to an increase in the market value of companies.

Mr. N. Suresh Babu and Prof. G.V Chalam (2014), analysed the factors determining capital structure of textile industry. The study was based on secondary source of data covering a period of 14 years from 1997-1998 to 2010-2011. The study used leverage, profitability, firm size, tangibility, growth, business risk, non-debt tax shield, liquidity as their variables and observing pecking order theory. The study had made use of various statistical tools like summary statistics, correlation analysis, multiple regression analysis, 'T' test, 'F' test and ANOVA. The research concluded size, growth, risk, non-debt tax shield and liquidity were negatively related with leverage while profitability and tangibility were positively related with leverage.

RESEARCH OBJECTIVE

To understand the relationship of Net profit margin, Operating profit margin, Return on Assets, Return on Capital Employed with Debt Equity ratio of the selected telecommunication companies and assess the degree of effect they create on debt equity ratio.

Hypothesis Development

The hypotheses developed are:

- 1) H₀- Net profit margin does not impact Debt Equity.
H₁- Net profit margin impact Debt Equity.
- 2) H₀- Operating Profit Margin does not impact Debt Equity.
H₁- Operating Profit Margin Impacts Debt Equity.
- 3) H₀- Return on Assets does not impacts Debt Equity.
H₁- Return on Assets impacts Debt Equity.
- 4) H₀- Return on Capital Employed does not impacts Debt Equity.
H₁- Return on Capital Employed impacts Debt Equity.
- 5) H₀- Return on Net Worth does not impact Debt Equity.
H₁- Return on Net Worth impacts Debt Equity.

RESEARCH METHODOLOGY

The research conducted in order to determine the relationship between various variables of capital structure of selected Telecommunication companies in India. The study is based on secondary data obtained from PROWESS database maintained by Centre for Monitoring Indian Economy (CMIE). The sample consists 3 Telecommunication companies. The sample companies are, City online services limited, HCL Comnet Systems & Services Ltd, Sify Technologies Ltd. The data for the study have been collected for the period of 5 years from 2015-16 to 2019-20. For data analysis, the methods that has been applied are Multiple regression and multicollinearity test using SPSS. Debt to Equity Ratio used as dependent variable whereas Net Profit Margin, Operating Profit Margin, Return on Assets, Return on Capital Employed and Return on Net Worth are taken as independent variable for the study.

RESEULTS AND DISCUSSIONS

Table 1 β , Significance Level

| | Standardized β (Beta) | T | Significance Level |
|-------------------------------|--------------------------------|--------|-----------------------|
| Constant | | -2.452 | .037 |
| Net Profit Margin Ratio | -1.243 | -9.809 | .000 |
| Operating Profit Margin Ratio | .487 | 8.320 | .000 |
| Return on Assets | .422 | 1.960 | .082 |
| Return on Capital Employed | .457 | 2.357 | .043 |
| Return on Net Worth | -.753 | -3.984 | .003 |

Dependent Variable: Debt Equity Ratio

Independent Variable: NPMR, OPMR, ROA, ROCE, RONW

Above table represents the standardized regression co-efficient of independent variables with associated values. As mentioned in table, the standardized β of Net Profit Margin is -1.243 which suggests that Net profit Margin has negative relationship with Debt Equity. However, its significance level of 0.000 makes it high value of significance. The evidence suggests that Null hypothesis H_0 be rejected and alternative hypothesis H_1 be accepted. This clearly means that Net Profit Margin Impact Debt Equity Ratio.

As mentioned in the table the standardized β value of Operating Profit Margin is +0.487 indicating that Operating Profit Margin bears positive association with Debt-Equity. In addition, significance level of Operating Profit Margin stands at 0.000 makes it technically high significant. Therefore, it suggests that null hypothesis H_0 be rejected and alternative hypothesis H_1 be accepted. This means operating profit margin impact Debt-Equity Ratio.

Return on Assets (ROA), as mentioned in the table, has positive association with debt-equity as the standardized β values of ROA stands at +0.422 The significance level of ROA being 0.082 making this technically insignificant. The evidence suggests that null hypothesis H_0 be accepted and alternative hypothesis H_1 be rejected. This means Return on Assets does not impact Debt Equity Ratio.

The standardized β value of Return on Capital Employed (ROCE) is +0.457 indicating positive relationship with Debt-Equity. In addition, significance value of ROCE stands at 0.043 making this significance. The statistical evidence, therefore suggest that null hypothesis H_0 be rejected and alternative hypothesis H_1 be accepted. This means Return on Capital Employed influence Debt-Equity Ratio.

As mentioned in table, standardized β of Return on Net Worth (RONW) stands at -0.753 indicating that RONW bears inverse association with debt equity. The significance level of Return on Net Worth being 0.003 making this significant. The evidence, therefore suggest that null hypothesis H_0 be rejected and alternative hypothesis H_1 be accepted. This clearly suggest RONW impacts Debt-Equity Ratio.

Table 2 Descriptive Statistics- Mean and Standard Deviation

| | Mean | Std. Deviation |
|-------------------------------|---------|----------------|
| Debt Equity Ratio | 1.04853 | 1.999875 |
| Net Profit Margin Ratio | -4.667 | 14.1106 |
| Operating Profit Margin Ratio | 7.067 | 11.9599 |
| Return on Asset | -3.587 | 9.3048 |
| Return on Capital Employed | -10.113 | 25.4319 |
| Return on Net worth | -18.580 | 45.5490 |

The above table provides Mean and Standard Deviation of all the variables used for the study.

Table 3 Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | | Durbin-Watson |
|--|------|----------|-------------------|----------------------------|-------------------|----------|-----|-----|---------------|---------------|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change | |
| 1 | .997 | .995 | .992 | .183841 | .995 | 329.543 | 5 | 9 | .000 | 1.150 |
| a. Predictors: (Constant), Return on Net worth, Operating Profit Margin, Net Profit Margin, Return on Capital Employed, Return on Assets. Dependent Variable: Debt Equity Ratio | | | | | | | | | | |

The coefficient of determination i.e., adjusted R^2 is 0.992. This determine that the above stated model can justify 99.2% variations in Debt Equity Ratio.

The Durbin-Watson statistic is less than two this indicates a positive correlation.

CONCLUSION

The study aimed to explore the relationship between Net profit Margin, Operating Profit Margin, Return on Assets, Return on Capital Employed, Return on Net Worth with Debt Equity Ratio. Multiple regression and multicollinearity test used for the research which clearly stated that Net Profit Margin has negative and very

significant association with debt equity whereas Operating Profit Margin has Positive and very significant association with debt equity.

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SOCIAL AND CULTURAL ASPECTS IN URBAN SUSTAINABILITY: A CASE OF ALOE VILLAGE IN MANALI

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ABSTRACT

Urban planning in context to social dimension of sustainability has multi-faceted and complex dimensions. Configurations of urban settings in terms of density, accessibility, etc. are closely related with environmental quality. Social and cultural dimensions have an important role to play in this context. Urban design patterns often are interrelated with social sustainability as the former enhances the latter. Relationship between sustainable development dimensions and urban form leads to creation and adoption of urban design approaches like new urbanism, compact-city etc. At the city level, social and cultural aspects do affect urban landscape and urban patterns of the city which overall affect the urban design and urban form of the area. It has magnificent impact on development potentials of the area since a positive relationship would enhance urban image of the area and foster future development in various sectors and a negative implication would project an image of a rather unorganized urban landscape to others which also mars the development of different potential growth sectors of the area. In this context, the social and cultural aspects from the point of sustainable development for hilly area of Aleo village have been studied. The research study involves study of urban design pattern in terms of social infrastructure and cultural dimensions involved which affects sustainable development in the area. Attempt has been made to study the problems and provide practical solutions in the form of proposals for improvement which can be advantageously adopted by planning authorities and designers alike.

Keywords: urban sustainability, Manali, hill town, urban problems

1. INTRODUCTION

In present context, there is requirement to enhance social sustainability in present urban design context [1]. Due to fast urbanization and rapid development, different problems have resulted from modern urban development leading to lack of sustainability and instability in the present urban forms especially in case of hilly areas [2]. In this regard, too much dependency and over use of natural resources, pollution, degradation of ecosystem has led to manifold problems of global warming and climatic changes, increasing social inequality, increasing urban heat island effects, cultural intolerance etc.[3]. Today, there is requirement to see interconnections of society, people and built environment to understand issues involved therein social sustainability [4]. Since social welfare and requirements of society at whole are important to be considered in context of built environment. Therefore, study of social infrastructure, facilities and cultural aspects related to urban design becomes important to be considered [5].

2. RESEARCH APPROACH

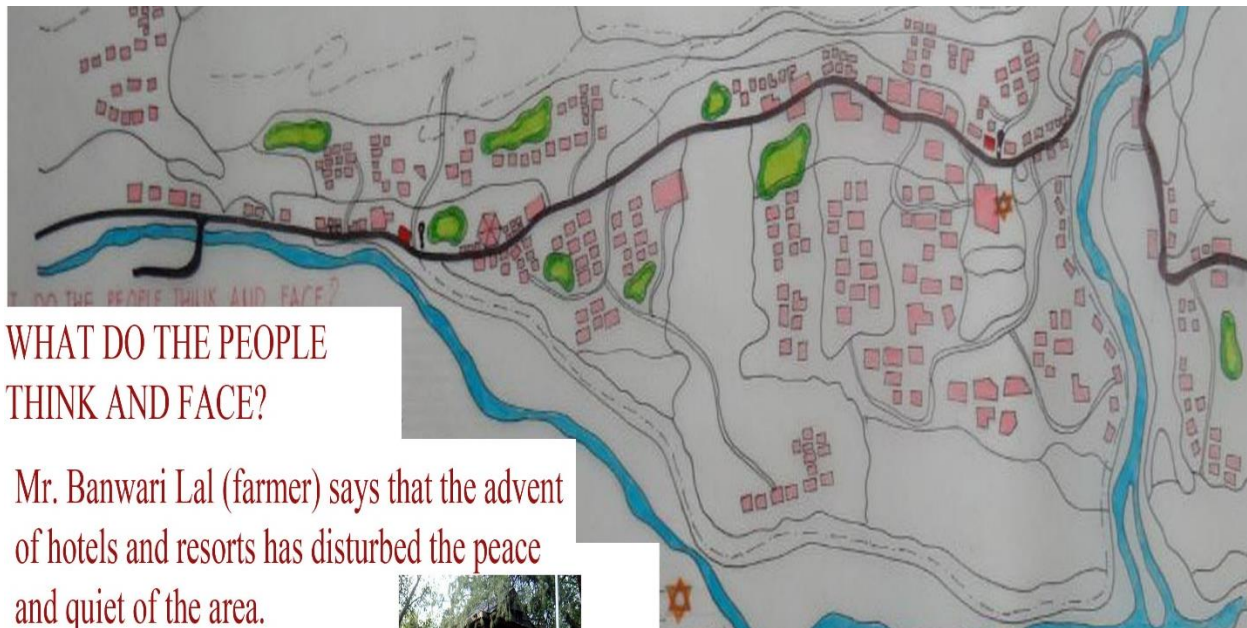
In order to study urban –architectural patterns of Aleo village in old Manali, the Development Plan [6] was studied and a pilot survey was conducted with the help of people and students to practically gauge and understand the existing scenarios of social, physical and economical infrastructure with reference to the context [7,8]. This exercise was undertaken to understand 1) the spatial patterns of the area, 2) changes happened in these scenarios so far and 3) the problems therein in order to find remedies which can be forwarded to appropriate town planning authorities for mitigation purposes.

Aleo village is located in North Indian state of Himachal Pradesh which is known for its majestic green valleys and natural scenic beauty. The place is famous tourist destination with thousands of tourists flocking the area every year for varied purposes for sightseeing, religious and pilgrimage purposes, eco-health facilities and adventure sports etc. As per survey conducted, local residents are of the opinion that the area has promising potential in field of tourism. However, with growing tourism in the area, where economic development has been boosted, social and cultural issues have started surfacing up in the area as discussed below.

3. SOCIAL INFRASTRUCTURE ASPECTS IN URBAN PATTERNS

The influx of tourists and involved rapid urban development has a deep rooted impact on cultural environment. the uniqueness and distinctive lifestyle patterns and age-old social fabric from daily lifestyle of people are getting diffused at very fast pace. In order to understand the impact on social fabric and cultural implications involved therein, social and cultural aspects were studied in the form of presence of pilgrimage places, hotels, resorts etc. with effect on built environment and life of local residents involved. Social patterns in urban design includes presence of nodes, landmarks and spaces that accelerates and boosts economic activities related to

social and cultural pursuits. Specific spaces in the area with the social and cultural activity generators were earmarked [Fig.1] and their effect on settlement and ancillary services, floating population was studied.



Legend

Temples Green spaces/ grounds Roads

Fig.1 Social infrastructure facilities in the area

The figure shows the presence of two temples and some hotels, resorts in the area. Detailed status has been discussed hereunder.

3.1 Socio-cultural environment

Due to huge strain on infrastructure facilities because of heavy influx of floating population, often situations of clash between modern lifestyle and traditional lifestyle aspects are seen which also disturbs the serene and clam environment and feeling of brotherhood in the area.

3.2 Religious and cultural aspects

As is also shown in Fig.1, there are two temples in the area. These two temples are hub of all cultural, religious activities and festivals. However, there is no provision for gathering spaces around them for celebration of involved cultural and festival activities. This creates chaotic and crowded place especially during festival season. This crowd also spills on the main road during festive seasons and obstructs traffic and creates traffic related problems.

3.3 Status of old traditional structures

Status of old traditional structures has been shown in Table 1 which clearly shows that since 1870, old traditional structures made of wood, stone do exist in the area which also act as an attraction for the tourists/outsidars.

Table 1: Status of old traditional structures in the area

| DATE | NUMBER | MATERIAL |
|-------|--------|-------------|
| 1870 | 1 | WOOD |
| 1920 | 2 | WOOD |
| 1960 | 11 | WOOD, STONE |
| TOTAL | 14 | |

It is important to mention here that although these age-old traditional houses act as attraction for the tourists yet these old houses need preservation and care. These require protection against vandalism and requires maintenance by authority.

3.4 Literacy and education status

Status of schools and school going children in the area has been shown in Fig. 2 which clearly shows that out of total demographic profile of children, there are nearly 32% children under the age of 10 years, 36% children in the age group of 10-15 years, 23% children in the age group of 15-20 years. With reference to this profile and requirement of schools (primary and senior secondary) and colleges, there is only one school in the area with bad infrastructure facilities. Adequate facilities for physical growth of children like proper playgrounds, sports activity and academic development of children do not exist. There are many children in the Aleo village and surrounding area, but there are no playgrounds and parks. Presence of only one school in the area discourages children from far-flung areas to seek education.

3.5 Medical and Health status

At present there are no medical facilities like dispensaries or clinics in entire Aleo village. Sick people from this area have to visit the only Government community health center and two private hospitals located in Manali. Therefore, the residents have to travel a lot to avail medical facilities which are there only in main Manali. Moreover, the ambulance service in the area is also very erratic.

3.6 Housing status

As per the survey, out of 216 houses in the area nearly 35% of the residential plots are smaller than 100sq.m and 65% of the houses have bigger plots. Only 8% plans are approved by competent authority. As a result, random and haphazard sprouting of houses in the area has created undue stress on existing social infrastructure facilities. Due to no proper planning, the social and cultural aspects involved therein are getting degraded.

3.7 Housing Access

Due to very narrow winding roads and alleys inside residential settlements; four wheelers cannot reach interior of the houses. Only 12% of the houses have parking access from the main road. Rest of the houses have kutcha or no access from the main road. This condition is worrisome from social welfare point of view that in case of emergency and medical problems, no immediate relief help would be able to reach to the area.

3.8 Housing signage

Numbering and nomenclature of the houses is not followed. Some houses follow owner's name for identification purposes. Only major hotels and other buildings serve as landmarks. Sense of identity of the area has been lost for providing immediate services for the tourists and floating population.

4. PROPOSALS : STRATEGIES FOR IMPROVING SOCIAL INFRASTRUCTURE ASPECTS

4.1 Socio-cultural environment

The area has a unique aura and embodies Himachali spirit. In this area unobstructed construction activity is going on. There is almost equal percentage of floating and permanent population. The impact of all this is that, the modernization of the area is happening at an alarming rate threatening cultural vibes and values. Therefore, balance has to be seen in case of development activities. It is required that not only requirements of the tourist are considered but of the permanent local population are also given due consideration.

4.2 Old traditional structures

In order to arrest the deteriorating condition of old traditional structures, government control over building requires to be regulated. It is required to regulate the random use of such buildings by neighbours and people, provide structural support against earthquake probability, protection against vandalism is required, and most importantly restoration of the structure with the help of archaeologists and architects is the need of the hour.

4.3 Religious and cultural aspects

In context of lack of assembly and gathering spaces around temples, there is ample scope of providing these spaces as these temples have vast tracts of grassy patches nearby which can accommodate 50 people at a time [Fig.2] Therefore, it is proposed that grassy patches be cleared of the weeds filled there and arrangement to accommodate people during festivals be made with provision of basic amenities. This would help to solve the problem of crowd spills and traffic congestion on the main road during peak festivals.

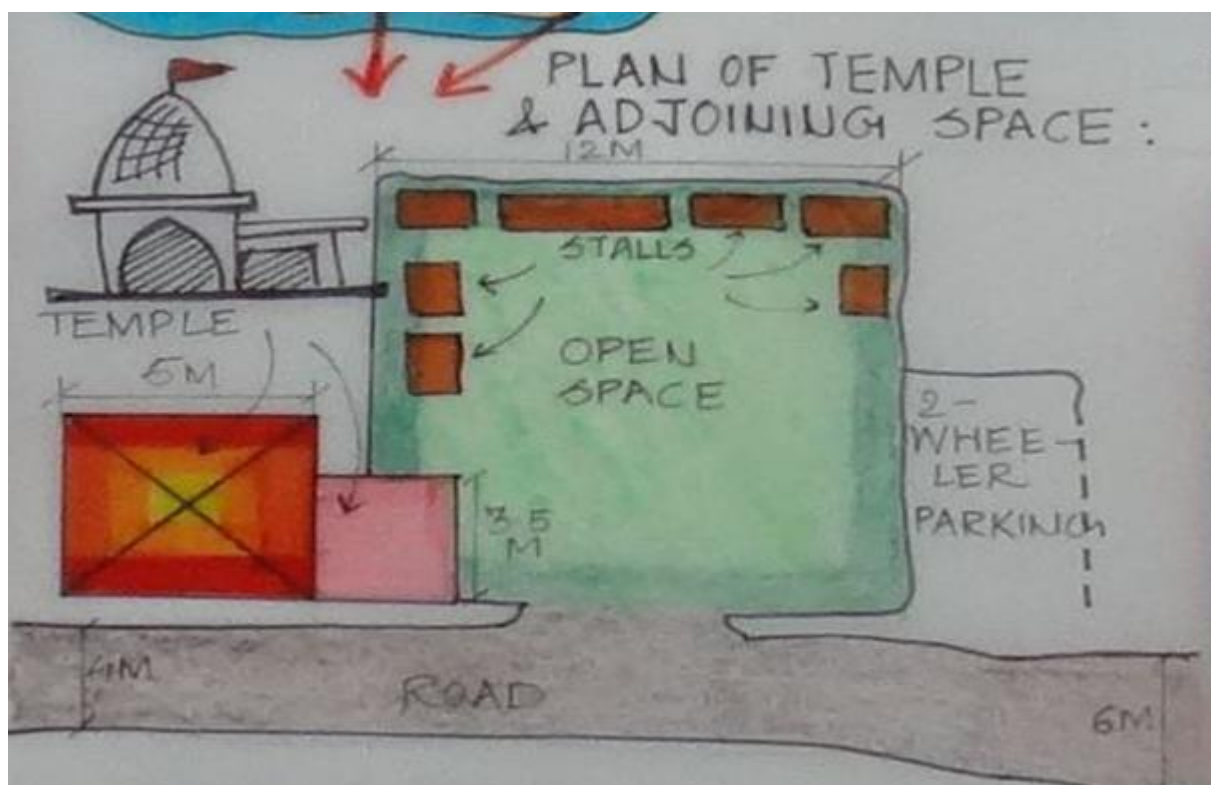


Fig. 2 proposed development of temple assembly ground

4.4 Literacy and education

In context to the given status of schools in pervious section, too much pressure is there on the single school located in the area. Therefore, it required to upgrade its services and infrastructure facilities. It is proposed to design and construct a school from 1st till 10th class with proper provision of playground and provision of science, and computer labs of good quality. Government authorities have shown affirmative response in this regard and initiation from public is also required.

4.5 Public awareness programs

Lack of general awareness among people of the area is there. Therefore, it is required to conduct awareness programs, and night classes by members of NGO and volunteers. In this regard, existing and proposed schools can be used as centers of night classes. Lack of development hinders overall development of the area, therefore spread of public awareness would lead to better standard of living, maintenance of age-old traditional values at the same time. Better hygiene conditions and improved literacy would also improve the financial condition of the people of the area. Night classes would address importance of education, importance and necessity of good hygiene in homes, reduce excessive dependency on agriculture, encouragement to start small businesses, special classes for women awareness.

4.6 Medical and Health status

In context to absence of hospitals, clinics or dispensary and no reliable ambulance service in the Aleo village; 03 health care centers are proposed to be located in the area. These areas are high density and easier to reach and can cater to a high range of people. These would be located at 03 spots on the main spine and would have vehicular accessibility. It is proposed to construct a healthcare center which will have all basic healthcare needs. It is proposed to set up a reliable ambulance service and there should be provision of free health education workshops.

4.7 Housing

In context to problem of housing, it is hereby proposed that house plans require to be regularized by authorities, structural support be provided to the houses which are in danger of collapse, residences of one type be grouped together to ensure proper identification and servicing.

5. CONCLUSION

The survey based research involving use of documentation of secondary and primary data has enabled to identify problems and issue related to social; and cultural aspects especially social infrastructure facilities. It has also helped in searching sustainable solutions for social causes leading to generation of problems in urban scape

of the area. These proposals would be helpful for planners and regulating authorities for solving the social sustainability problems in urban context.

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FORMS OF FINANCIAL INFORMATION PRESENTATION IN DECISION MAKING: DOES THE APPEARANCE OF FINANCIAL STATEMENTS AFFECT THE PERCEPTION OF THE READERS?

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ABSTRACT

This study aims to determine how the form of financial information presentation can affect the perception and decision making of readers. This study discusses three forms of visualization of financial information presented in tables, graphs, and texts that can play a role in reducing decision-making bias in interpreting financial statements. The data collection of this research was conducted using a survey method on 100 respondents from various types of professions to explore the preferences of financial statement readers towards the form of presentation of financial information. The results of this study indicate that, regardless of gender, profession, and age, a person's tendency to choose the form of presentation is largely subjective. Factors that make someone interested or less interested in a form of presentation of financial information namely are: visual aspects such as color and shape, type of font and spacing, and simplicity of appearance.

Key words: presentation, financial information, tables, graphs, text

1. INTRODUCTION

Everyone will decide at any time with the help of various kinds of information, both visual and non-visual. No exception for financial information. A good graphic display in the presentation of financial information must be sought to influence the assessment and decision making by users of financial statements.

This is not without basis, for example the graphical display represented by the graphs contained in the annual report, which is visually attractive, is likely to be noticed. In addition, because the human capacity to remember visual patterns is superior to memory for text or numerical tabulations, graphics are also more likely to be remembered (Paivio, 1974). As another example, we look at a chart of the Dow-Jones Index, unemployment rate, money supply, rate of return, sales, etc. These items are displayed in graphical form to help detect trend changes that are not easily identified by standard statistical models. Even the International Accounting Standards Board (IASB) amended International Financial Reporting Standard 7 (IFRS 7) - Financial Instruments: Disclosures requiring that "if the quantitative data disclosed at the end of the reporting period does not represent an entity's exposure to risk during the period, the entity must provide further representative information" (IFRS 7, par. 34, 2020). It can be interpreted that additional information is needed in the form of tables, graphs and other forms in order to improve the quality of delivery of quantitative data.

This research is written by expressing the author's ideas along with the development of various perspectives of previous researchers. Readers will be given an understanding of the point of view of Amer (2005) in terms of visual illusions and Cardoso et al., (2016) in terms of presenting information, to how mood plays a role in reducing decision-making bias in interpreting financial statements. This study also presents how Amer (2005) studied visual illusions in decision making with what Cardoso et al., (2016) learned about presenting information in decision making. This combination is added with the mood variable as a new perspective on decision making from an experimental point of view.

It is hoped that through this research, readers can gain new insights into the visual role of documents such as financial statements that combine color, text type (font), and the type of graphs and tables that play a role in influencing user interest and ultimately influencing the decisions of users of these financial statements.

2. LITERATURE REVIEW

Forms of financial information presentation:

There are various forms of presentation of financial information. This study uses three types of presentation of financial information in the form of:

a. Table

A table is a list that contains a summary or an overview of information data, usually in the form of words and numbers arranged in a systematic manner, in descending order in certain rows and series with dividing lines so that they can be easily listened to. With the inclusion of financial data in the table, it will make it easier for users of financial statements with a financial background to understand the data systematically.

Presentation of data in tabular form provides more detailed information than graphs and is more concise than text. However, not all readers will prefer the presentation of information in the form of tables rather than the

presentation of information in the form of graphics and text. As quoted from the research of Rosdini et al. (2020) that people with accounting or financial backgrounds will prefer the presentation of information in tabular form, while non-financial and accounting people will prefer the presentation of information in other forms.

In determining their preference for a table, the respondents have very diverse reasons. Several factors that explain the tendency of a person to like and dislike the presentation of tables in financial statements are further explained as follows: (a) Color, this factor takes into account the tendency of respondents to the table, especially the tables taken from the five companies here have different colors; (b) Types of table, the presentation of financial information in the form of tables generally does not have many variations and is in the form of rows and columns; (c) Font, the choice of font in the presentation of the table can affect the preferences of the reader. The type of font that is simple but attractive can influence the reader's attention to read the table more carefully. In addition, the font size can also affect the clarity of the readers so that they can read the information in the table; (d) Spacing, the distance between the tables in the financial statements is also a factor in the preferences of the readers. The existence of a space or distance between information in each part of the table will make a table preferred. (e) Aesthetics, the beauty of the table can affect the preferences of readers in choosing the table view they like the most. Although not significant, it is also important for presenters of information to use matching color choices so as to attract the interest of the reader. (f) Familiarity, the habits of readers of financial statements determine their inclination towards a table. Habits can lead to bias in decision making, triggered by unconscious bias or experience, background, gender, or other factors that prevent fair decisions from being made. As if you are not used to reading a table that displays the most recent data on the left and the oldest on the right. (g) Diction, the choice of language is one of the factors that determine his preference for a presentation of financial information in tabular form. Although not significant, it is important to note that financial statement presenters do not understand financial statement readers with information in a particular language, which will make it difficult for them to understand the information and have an impact on making their decisions. Thus, it is important for financial statement presenters to provide a table that is bilingual or bilingual because it makes it easier for readers to understand the names and descriptions of the data (accounts).

b. Graph

Financial reports are dominated by quantitative data. Types of graphs that are often used in the communication of quantitative information are lines, columns or blocks, pies, and pictures (Beattie, 1992). In the processing of quantitative data itself, these charts have correspondence to several types of quantitative data. These types of charts include: (1) line graph, (2) column beam graph, (3) circle graph

c. Text

Text is a fixation / institutionalization of oral discourse in writing. According to Beaugrande and Dressler (1981), text refers to a communicative event. The text is transmitted through an appropriate channel or medium and (ideally) will have a function that fulfills its intended communicative purpose. Action in a communicative situation provides a framework in which the text with its function has its own place and the text can only be understood and analyzed more deeply and in relation to the framework of action in the communicative situation (Nord, 1991). This definition is also said by Kallmeyer et al. which is translated by Nord (1991) that a text is entirely a communicative signal used in a communicative interaction.

The type of text in the Annual Report or other formal documents is included in the category of factual text with the type of report and information. Feez, (2002) states that making a text requires choices about the words used and how to arrange them. Therefore, even though it only focuses on financial information and company information, the Annual Report must still present the text with the right choice of words and visuals through a creative combination of text type (font) and color. The right choice of text will encourage users to be interested and understand the contents of the report well.

Memory and Judgement

Scientists such as Birnberg and Shields (1984) formulated a decision-making framework that aims to explain the influence of internal cognitive processes on accounting judgment and decision making (JDM). According to this framework, information cues are initially perceived by sense-perception organs (visual or auditory organs, such as the eyes or ears), which can store information in time ranges ranging from milliseconds to several seconds.

Their framework also considers memory processing very efficient in minimizing the occurrence of biases or errors that can distort information processing. This is particularly relevant in the fields of accounting and

finance, where individuals are usually exposed to information overload and time pressure (Braun 2000; Glover 1997; Choo 1995; Libby & Trotman 1993).

Cause of bias and error

Basically, the structure of memory in humans consists of sensory memory (sensory memory / SM), short term memory (STM) and long term memory (LTM) systems known as the Atkinson and Shiffrin paradigm models that have been developed. perfected by Tulving. Information coding is the first function of memory processing, which allows individuals to encode and manipulate perceived raw information (i.e. SM) along with information stored in STM. Information encoding is required for subsequent memory storage and memory retrieval, as this memory function gives individuals the ability to convert information into a format that can be stored in LTM.

Some of the causes of bias and errors in information processing can occur due to cognitive constraints and limited processing capacity. Ding et al., (2017) stated that there were six identified factors, namely: selective attention, salience effect, cue competition, gist (digest), category learning, and mood. The six factors identified by Ding et al., (2017) below were carefully selected from a much wider list of factors that can cause bias during the information coding stage. These factors are intended to raise awareness of the compilers of accounting information and how certain actions during the coding stage of information are likely to affect the storage and retrieval of information resulting in biased judgments and decisions.

The Role of Financial Information Display in Decision Making

Basically it is very common for financial statement presenters to use graphical displays in conveying business and accounting information, because, this can help decision makers to get a better and easier understanding.

Companies use the importance of graphic visualization in financial statements to selectively disclose information in a way that can distort user perceptions of information about the company's actual performance (Amer, 2005). For example, management can use a well-designed graphic format to cover one's judgment (Beattie & Jones, 2008). In addition, they may choose an inadequate comparison of earnings information to highlight the positive side of the firm's performance (Schrand & Walther, 2000), adopt a distorted earnings chart (Pennington & Tuttle, 2009), and use discretionary disclosures in the corporate narrative to increase importance and judgment (Merkel-Davies & Brennan, 2011).

Based on existing studies, it can also be said that visual displays hold the key to better communicating financial information and avoiding decision-making bias. Nevertheless, there will always be the possibility of misinterpretation in the visual appearance which can lead to relatively poor decisions (Arunachalam et al., 2002). This poor decision could be due to a visual illusion that affects the reader of accounting information in a graphical display. This statement is supported by Amer (2005) who found that decision makers such as investors can systematically misread the values presented in graphical displays as a result of a visual illusion called the "Poggendorff illusion" (Amer, 2005). Researchers such as Changizi et al. (2008) also proved in his research that visual illusions may be a case of biased decision making. This biased decision making can be caused by visual illusions in the form of two-dimensional illusions. The misperception of the projected angle and the misperception of the projected size in the two-dimensional illusion are considered by Changizi as the source of the bias (Changizi et al., 2008).

In Indonesia, the Financial Services Authority (OJK) sets information standards that need to be disclosed in financial reports. With a lot of information disclosed by companies in their annual reports, it is not surprising that readers such as investors and company managers only skimmed (skimmed) the annual report. The amount of information that needs to be digested in a limited time makes the possibility of bias in interpreting the report. This bias can be a gap for readers, especially investors, in making inaccurate decisions for many important choices (Rosdini et al., 2020).

One of the factors that cause bias is selective attention. This happens because humans have limitations in examining and evaluating existing information, so that decision making cannot be said to be completely rational (Hirshleifer & Teoh, 2003). This makes companies very selective in choosing what information and with what narrative to disclose in their annual reports. This is a strategy to emphasize certain information, which is considered to significantly affect the reader's judgment.

3. RESEARCH METHOD

The method used in this research is a survey method and uses the form of presentation that is most often found in financial reports, namely graphs, tables, and text as the object of the research. In its implementation, respondents were asked to rank each form of presentation of financial information from the company's annual reports starting with the presentation they liked the most and the one they least liked. Each of these preferences

is asked in a different question. The first question contains the order in which the respondents prefer the form of presentation. From this question, we will find out the order of presentation forms that are most preferred by respondents based on the form of presentation of financial information from the Annual Reports of five companies: Antam, Adaro, Adhi, KF, and ITP. The second question contains the order of the form of presentation of financial information that is the least preferred by the respondents. From this question, we can find out the order in which the form of presentation of financial information is the least preferred by the respondents.

In presenting the results of this survey, we divide each form of presentation into two parts. The first section will be referred to as "Preferred" and discusses the order in which the respondents prefer the form of presentation. In addition to explaining the order of the most preferred display percentages, we also provide a discussion of the factors that influence these preferences. The second part referred to as "Less Like" will discuss the second question regarding the forms of presentation that respondents least like. This section will also discuss the factors that underlie the respondent's choice.

This survey was conducted in the period April – May 2021 involving 100 people who work as students, academics, and professionals. The demographics of the survey respondents consisted of 35 respondents who were male and 65 female with an age range of 21 to 44 years. In addition, 75% of respondents are students, 16% are from professionals, and the rest are academics.

4. RESULT AND DISCUSSION

This study examines the factors used in respondents in determining their preferences for the presentation of financial information in the form of graphs, tables, and texts. Respondents considered that the informative, representative, and simplicity aspects of these three forms of presentation are universal and general so that they must exist in these three forms of presentation

Based on the results of the research that has been carried out, the following are the answers regarding the level of respondent's tendency to 'prefer' and 'dislike' the three forms of presentation of financial information, namely graphics, text, and tables from the five Annual Reports provided.

a. Graph Preferable

As many as 63% of respondents tend to like the graphs in the ADRO Annual Report and the other four charts are only liked by 37% of respondents in aggregate.

Many of the respondents who work as students prefer the Graphics in ADRO's Annual Report because the visuals are considered good. Most respondents think that this graph is easier to understand than the graphs in the Annual Reports of other companies. Unlike students, respondents who work as professionals prefer graphs in ADRO's Annual Report because of the type of graphs and their ability to convey information. The graph in ADRO's Annual Report is indeed different from other charts, because ADRO uses bar and line charts. The existence of these two graphs makes it easier for respondents to have more comprehensive information. Therefore, it can be seen that the graph type factor is rarely found in other graphs.

Result shows that male and female respondents prefer the graphs from the ADRO Annual Report. The most dominant visual factor emerged from the responses of female respondents, compared to male respondents. This factor is almost always the pinnacle that influences a woman's preference for a graph. In contrast to men who assess visuals as a determining factor it is not as significant as the type of graph and the ability of the graph to explain information.

Less preferable

From this response, 76% of respondents stated that they did not like the form of graphic presentation in the KAEF Annual Report. Meanwhile, the remaining 24% did not like the charts from the Annual Reports of the other four companies. The respondents' dislike of the KAEF chart is in line with the previous discussion, where the form of graphic presentation in the KAEF Annual Report is in the bottom two positions or the least preferred.

Result shows that the form of graphic presentation in the KAEF Annual Report gets the highest score for the less favorable category both among respondents who come from professional circles and students. This is because respondents who work as students see that the visual presentation of this Annual Report is considered too complicated to understand, looks unattractive, too much embellished, and quite confusing..

In particular, professionals consider that visually this form of graphic presentation seems cartoonistic, not easy to read, and does not look professional. The dislike of these two demographic groups of respondents can be traced to the same root. They don't like the graphic form in the KAEF Annual Report because it is considered unusual or unique. This graph uses a tube symbol to display the data and it does not show the difference between the existing data. Although the use of tubes in graphs can be associated with their position in the pharmaceutical industry, the use of tubes makes it difficult for users of financial statements to understand financial information because they are not commonly used and do not represent the dynamics of the data.

The distribution of responses on the graphs in the Annual Reports of other companies looks almost even. However, an anomaly can be seen where the proportion of female respondents (13/65) who do not like the graphics in ANTM's Annual Report is much higher than the proportion of male respondents (1/35). Male respondents did not like this chart only because the visuals were difficult to understand, but female respondents did not like this chart because of many factors such as color choices that lack contrast and monotony, visuals that are not understood, are considered complicated, and types of graphics that are rarely used. The number of female respondents who do not like this graphic is due to the color and visuals that are less attractive, further confirming the assumption that women are more likely to like things that are beautiful and aesthetic.

b. Text Preferable

Based on the survey results, 50% of the total respondents have a tendency to prefer the graphics contained in the ADRO Annual Report. As many as 32% of respondents prefer the graphs contained in the ADHI Annual Report and make this graph the second most preferred by respondents. The texts of these two company Annual Reports dominate more than 80% of the respondents. The text of the Annual Reports of the other three companies (INTP, KAEF, and ANTM) was only liked by 18% of the respondents. The cause of the disproportionate tendency of respondents to like an article in the Annual Report can be related to the respondent's ability to understand each of the existing texts.

Survey shows that respondents who are students and professionals most like the text in the ADRO Annual Report. The two main factors that caused the respondents to like the writings in ADRO's Annual Report are the choice of letters (fonts) and the spacing they use, as well as the simplicity of the text. Respondents proved to prefer text that is readable and not too big and not too tight. In addition, the respondents also prefer that texts containing financial information are presented simply and not difficult to understand. On the other hand, there is a student who likes the presentation of text in ADRO's Annual Report because it is considered representative (able to represent the actual state of the company).

The significant difference arised from the survey result, where there are no male respondents who prefer the presentation of financial information in the form of writing belonging to ANTM's Annual Report. Meanwhile, in terms of female respondents, no one prefers the presentation of financial information in the form of writing belonging to the INTP's Annual Report. Each gender has different preferences in this regard.

Female respondents do not seem to consider the ability of writing to convey information (informative) in their preferences. Factors that influence the tendency of women in presenting financial information are dominated by choice of writing, spacing, and simplicity of writing. This dominance also applies to male respondents. Even though they both make the choice of font and space as the key determinants of their preferences, male respondents are also seen to use other factors (informative, text grouping, simple, and representative) in determining their preference for a presentation of financial information in the form of text.

Less preferable

When faced with the question of which presentation of financial information in the form of text is the least preferred, 76% of respondents answered the text in the KAEF Annual Report. Meanwhile, the other 24% of respondents did not like texts containing financial information in the ADHI, INTP, ANTM, and ADRO Annual Reports. This is in line with what was discussed previously, where the form of graphic presentation in the KAEF Annual Report is in the bottom two positions or the least preferred. To find out more about the causes of this respondent's preference, we will discuss the factors that cause respondents to dislike the form of graphic presentation further in the following discussion. The form of text presentation in ANTM's Annual Report is the least preferred by respondents, both from professionals and students. Respondents saw that the presentation of this Annual Report was less attractive due to the choice of writing size and spacing that did not fit. The second factor that most made respondents dislike the text in the ANTM Annual Report was the complexity of the text in this Annual Report. The complexity felt by respondents regarding the text in the ANTM Annual Report was strengthened by the responses of one respondent with a student background and another with a professional

profession. They stated that they did not like the presentation of financial information in ANTM because according to them the writing grouping was not good (Writings were not divided into sections or groups). Respondents do not like texts that are presented randomly so it is difficult for them to find the essence of each text.

From the various presentations of financial information in the form of text, both male and female respondents did not like the writings in ANTM's Annual Report the most. The number of respondents who do not like the text in the ANTM Annual Report is not in line with the fact that the text is quite liked by the respondents. Many of the respondents did not like the presentation of financial information on ANTM due to the choice of font size and spacing. Figures 6.13 and 6.14 illustrate that font size and spacing are the main factors that respondents prefer to present financial information in written form. In addition, the complexity of a text is also an important factor. Both male and female respondents do not like the presentation of financial information in written form that is difficult to understand.

c. Table Preferable

Based on the survey results, 43% of the total respondents prefer the presentation of financial information in the form of tables in the ADHI Annual Report. The second position was filled by ADRO, the third position was filled by INTP, the fourth and fifth positions were filled by KAEF and ANTM. It can be seen from Figure 6.18 above, that respondents' responses to this form of presentation are different from the previous forms of presentation. The differences in respondents' responses in determining their preferences for each table are relatively insignificant. The distribution of data that is not too extreme can be related to the many factors that respondents consider in determining the presentation of information in the form of tables that they prefer. These factors will be discussed in more detail in the following discussion.

Result shows that respondents liked the aesthetic aspects, simplicity, representation, choice of language, type of table, table spacing, typeface, and habits of the tables in ADHI's Annual Report. Of the many factors that exist, the dominant factor for respondents from among students is related to the habits and ability of tables to convey information. Students prefer this table because they are accustomed to using tables like this in digesting financial information and at the same time being considered capable of presenting financial information well. On the other hand, the responses of respondents who work as professionals like the table in the ADHI Annual Report explaining that there is no superior factor, because these factors are only chosen by one to two people.

Survey shows that female respondents like this table because of three factors, namely habit, informative, and type of table. Female respondents prefer tables that have dividing lines between columns and are ordered from oldest to most recent data. The tables contained in the ADHI Annual Report are preferred by female respondents because this type of table is often used by respondents. This habit makes them, the female respondents, easier to understand the financial information presented in the table. In addition to these two factors, the main factor that underlies the preference of female respondents is that the table in the ADHI Annual Report is deemed capable of providing the information needed by the respondents.

In contrast to women, male respondents, male respondents, did not show the factors that dominated their preference for the ADHI Annual Report. Each factor only gets one to two votes on average, while the highest factor that dominates the preferences of male respondents is habit with three votes. The male respondents preferred the table containing the financial information that they usually used and in this case, they considered this table to be the table they usually used..

Less preferable

When faced with the question of which table of financial information is the least preferred, 68% of respondents answered the table in ANTM's Annual Report. 16% of respondents did not like the table containing financial information in the INTP Annual Report and the rest did not like the table in the ADHI, ANTM, and ADRO Annual Reports. This is in line with the results discussed earlier, where the form of table presentation in ANTM's Annual Report is the least preferred. To find out more about the causes of this respondent's preference, we will discuss the factors that cause respondents to dislike the form of the table presentation further in the following discussion.

Result shows that respondents who are students and professionals at most do not like the table containing the financial information contained in ANTM's Annual Report. Most of the students do not like this table because it is considered less informative and makes it difficult for them to understand the existing financial information. Meanwhile, respondents from professional circles did not like this table because they felt the distances from the tables were too close and often made them confused to understand the data.

Survey shows that female respondents do not like the presentation of financial information in tabular form in ANTM's Annual Report. The female respondents did not like a table that they felt was not able to convey information well. However, the reason male respondents did not like the table in ANTM's Financial Statements was because of the type of table. The male respondents think that the type of table used by ANTM's Annual Report is not neat and does not have column dividing lines. None of these lines make it difficult for them to understand the financial information at hand.

5. CONCLUSION

The conclusions of this study are depicted in Table 1 and Table 2 below:

| | | Graph | | Text | | Table | |
|---------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | | More preferable | Less preferable | More preferable | Less preferable | More preferable | Less preferable |
| Gender | Male | ADRO | KAEF | ADRO | ANTM | ADRO | ANTM |
| | Female | ADRO | KAEF | ADRO | ANTM | ADHI | ANTM |
| Profesi | Students | ADRO | KAEF | ADRO | ANTM | ADHI | ANTM |
| | Professionals | ADRO | KAEF | ADRO | ANTM | ADHI | ANTM |

Table 1 Respondent preference matrix

Table 1 describes the preferences of respondents by gender and profession on the presentation of financial information in the form of graphs, tables, and texts. From the table above, it can be concluded that the respondents, regardless of work background and gender, prefer the form of presentation of financial information in the form of graphics and text owned by the ADRO Annual Report. Meanwhile, the form of presentation of financial information in tabular form is dominated by tables from the ADHI Annual Report. The difference is that if the respondents are dichotomized by gender, it can be seen that male respondents are more likely to prefer the presentation of financial information in tabular form from ADRO and women are more likely to be ADHI.

Meanwhile, to explain the main factors that determine the tendency (likes and dislikes) of respondents to a form of presentation of financial information, the authors summarize these factors into a table as below:

| | Graph | | Text | | Table | |
|----------|-----------------|-----------------|------------------|------------------|-----------------|-----------------|
| | More preferable | Less preferable | More preferable | Less preferable | More preferable | Less preferable |
| Factor 1 | Visual | Visual | Font and spacing | Font and spacing | Informative | Informative |
| Factor 2 | Informative | Foreign | Simplicity | Complex | Color | Table Type |

Table 2 The main factor in influencing the tendency of respondents to the form of presentation of financial information

Through Table 2, it can be seen that, in a graph, someone will tend to consider the visual aspect or appearance of the graph more. The respondents view that a good graph is a simple graph, has contrasting colours, contains only relevant information, and is easy to understand. Although we want to beautify the graph so that it is pleasing to the eye, we recommend that the graph still be able to convey information clearly and continue to use the type of graph that is familiar. Although the graph is pleasing to the eye, the failure of the graph to convey information will encourage respondents to dislike it and interfere with the decision-making process. Unusual graphic forms also contributed to the respondents' dislike of a graph because they felt it was unusual and caused confusion in understanding the graph.

Second, in text, someone will tend to be affected by the size of the text and the spacing of the text. Writing that is too small or tight will make it difficult for readers to read and understand the contents of the text. However, writing that is too large will make it difficult for readers to focus and capture comprehensive information. On the other hand, the simplicity of writing also plays an important role in determining one's tendencies. People are more likely to like financial information in the form of simple text and get to the point. People don't like and tend to avoid writing that is complicated or long-winded because it makes it difficult for them to understand the information that writing is trying to convey.

Third, in the table, the elements of color and type of table play an important role in determining a person's likes or dislikes. Contrasting colors will help Annual Report users to understand the information that needs to be

underlined, for example to separate historical data and current data. To support the ability of Annual Report users to understand tables, they also prefer tables that have dividing lines between columns and look neater. These lines will help them in reading the table and become the separator between the existing columns.

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FOSTERING MUSIC THERAPY IN ENHANCING SOCIAL SKILLS TO PROMOTE ACADEMIC GROWTH IN CHILDREN WITH AUTISM SPECTRUM DISORDERS IN AN INCLUSIVE CLASSROOM SETTINGS

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ABSTRACT

The current study discourses on fostering music therapy (MT) in enhancing social skills to promote academic growth in children with autism spectrum disorder (ASD) in an inclusive classroom setting. In only a few activities, including such music, one has the opportunity to use one's full brainpower. When developing and adapting their motor planning abilities, children with ASD might be significantly affected. It is possible to utilize music and its elements for non-musical reasons in music therapy. Children with ASD may profit from music therapy since they can adequately communicate effectively. The study of MT is significant because it is a sort of therapy that is relevant to society. Children with ASD can benefit from MT as a technique of increasing social interaction and community involvement. The study could benefit from an understanding of MT as a whole. According to us, MT can help children and their families with ASD promote academic growth in inclusive classroom settings. MT has been demonstrated to be effective in the treatment of ASD in the long run. With the help of MT, these children were able to improve their social skills by better understanding, responding to, and interacting with their peers. Children with ASD can benefit from MT in several ways. To our information, this is the first study of its kind. We carried out this study to discover how MT intervention affected ASD child's opportunity to speak and respond socially. Both aggressive and inactive. There was a comparison between the two pairs of test results using active MT. MT has been shown in numerous studies to benefit youngsters with ASD. The implementation of MT in so many inclusive classrooms has the opportunity to boost both students and instructors. With the help of MT, students with ASD can become more accepted by society. Persons with ASD can, like everybody else, profit from and enjoy their lives more thanks to MT. Children with ASD behavioral or social skills can be treated with MT. MT was examined in this study as a conceptual model and as a teaching tool for inclusive classrooms. To help ASD kids succeed academically, the author looked into a range of ways for facilitating MT benefits in social skills in an inclusive classroom setting. MT is being used in various methods by teachers and therapists both for educational and therapeutic goals. Studies on the potential advantages of MT for students with ASD have shown that these academic gains are like those observed in studies with ASD in Inclusive Classroom Settings.

Keywords: Music Therapy, Enhancing, Social Skills, Academic Growth, Autism Spectrum Disorder, and Inclusive Classroom Settings.

INTRODUCTION

Humans have known and utilized the powerful effects of music for ages. The use of music to impact one's well-being and behavior can be found in the writings of Aristotle and Plato (Alberta Teachers' Association, n.d.). Brain function, pulse rate, respiratory, heartbeat, vitals, metabolic, skin rashes, and feelings are all impacted by music. ASD students who are enrolled in courses with a curriculum in inclusive settings. Mental health practitioners have utilized a variety of interventions to address children with ASD. In the past, kids with mentally or physically problems were secluded from the rest of the class. This study aimed to develop and improve diagnostic and therapeutic methods for kids with physically and mentally issues, especially those who have ASD. Music has been employed in therapeutic settings since the 1920s. The use of MT methods has been suggested to improve people's attitudes, interactions, and social skills. As the field of MT expands, music as a diverse teaching resource has become increasingly varied and widespread. Music can be a beneficial treatment for people with ASD since it affects the mind and body in ways that writing and words cannot. Music brings people with ASD and the general public nearer together (Allison Roberts, 2019). Students with ASD benefit from music and MT because they promote social development. According to Thompson et al., (2011), children who received family-centered MT combined with an educational intervention and other specialized therapies had more social contacts at home and in society. Vaiouli et al. (2015) used MT to improve social skills and collaborative involvement. Visual attention, cognitive processing response, and learning and memory are beginning all enhanced in all three topics. The children were smiling and getting closer to the square, as per the researchers. During one of the performances, one of the kids gripped the hand of another. According to Finnegan and Starr (2010), a music intervention dramatically boosted the patient's emotionally responsive behaviors and lowered her distrust. Mapping techniques and therapy have been developed to help satisfy all

these persons' wide range of needs. Music and MT can be used to teach, modify, regulate, and maintain appropriate behaviors. Music and MT aid children with ASD by increasing their engagement and social skills. By boosting independence, physical interaction, and cognitive control, music and MT can support kids with ASD learn and interacting with the environment surrounding them. Whenever music is blended with standard teaching techniques, it can help students have better classroom instruction. A diversity of interventions have been tested in the treatment of ASD. MT, which employs music for therapeutic applications, is one of these intervention methods studied in the past to help individuals with ASD improve their social skills. This strategy enables us to build network connectivity, enhance socialization, and improve the lives of these individuals. While the music was being played, body language, stability, and changing performance all improved. Concerning an MT approach, Mendelson et al. (2016) identified an effect on social and life behavior in primary school students with ASD. MT is considerably more successful than play treatment in addressing cognitively control issues in children with ASD, according to Kim et al. (2008), respondents in the MT sessions of the trial listened for longer durations of time and rotated for more extended periods. The gathering of adolescents includes music, singing, and a beat-based game. In children who participated in group MT, social isolation was reduced because they formed and kept relationships with their classmates in an inclusive classroom setting.

Etiology on Autism Spectrum Disorder

For generations, the cause of ASD has been a contentious issue. The exact cause of autism, as per Russell, Kelly, and Golding (2009), is yet unknown. As per studies, ASD may well be influenced by genetics and environmental factors (Glasson et al., 2004; New Schaffer et al., 2007). Some have speculated that a combination of factors, such as inheritance, environmental, and neurodevelopment, maybe at work (King, 2015). Parents and family members have voiced alarm over a broad spectrum of illnesses, causing some to propose their reason. Many parents often feel that ASD is impacted by a mix of genetic and environmental (Dardennes et al., 2011; Goin-Kochel & Myers, 2005; Mercer, Creighton, Holden & Lewis, 2006). Certain persons may find it odd when somebody tries to convey their feelings or adapt to a new condition. Students with ASD may resort to repetitive behaviors to decrease or maintain the degree of randomness in their lives. While it derives from nonverbal communication, people living with ASD can often not interpret facial expressions, body position, and physical contact. By this disparity, it might be problematic to advance relations in social settings. Students with ASD may have concerns seeing and assigning their own and others' needs. This could make them all look detached and chilly. ASD affects others in many ways, not the least of which is their capacity to interact. Oversharing can be a little of an issue. It is challenging to keep a discussion accepted with someone who has ASD because they desire to exchange about things they are interested in rather than listening to what the other people is trying to say (Centers for Disease Control and Prevention, 2016). ASD is a neurological condition that makes social skills and behavior issues that may impede school performance, according to the Centers for Disease and Prevention. ASD affects one out of every 59 children, with boys having three to four times the prevalence of girls. It has an impact on people of all races and countries. Sensory problems are frequent in individuals with ASD; children with ASD may be hypersensitive to things, vision, feel, and other senses. Although the etiology of ASD is unclear, experts believe that environmental, pharmacological, and hereditary factors may have a role in its progression. Early signs of ASD develop in children as early as three, although some continue to expand and probably forget what they're being taught in the classroom. ASD cannot be cured, but its signs can be managed, and the burden on particular abilities can be reduced (Centers for Disease Control and Prevention, 2016). Every person with ASD is an individual with their own set of strengths and limitations, and this must always be borne in mind. Dr Stephen Shore believes that learning about autism from just one person is sufficient. Students with ASD have behavioral, social, and communications problems. Students with ASD have a hard time understanding what is happening around them in an inclusive classroom settings.

Significance of Music in Today's Education Systems

Studies in education and neurology have found that music substantially impacts children's intellectual and psychological development. While playing music, cognitive studies reveal that the frontal lobe is activated when listening to music. Maths, languages, and sciences are considered the most important disciplines to study in school and life. That is only one of many illustrations of how music can make a difference in our lives. For its ability to move humans, music has long been seen as a divine art form. Humankind has understood that music impacts our looks and personality for a long time, and ancient civilizations like Greek and India were aware of this. There are many myths regarding the power of music to transform both humans and deities. Still, Satyr Marsija's compositions can charm those who hear them with its Dundee and voices (Dona, 2006). In a music-rich setting, learning is facilitated (Ohlhaber, 1998). It wasn't considered art in these areas the way it is today. Teachers now have greater responsibility and opportunity to assist and improve classroom learning as the role

of the surroundings grows and matures. Students' performance, temperament, and enthusiasm can be enhanced through various instructional methods. Even though music is rarely used in the classroom, it has a vital role in every child's education. William Earhart, chairman of the Music Educators National Convention, says that music "promotes understanding in subjects such as math, physics, geographical, historical, foreign languages, physical education, and vocational education." It's clear to us that forms of art, especially music, can help increase students' capacity to do simple math abilities and raise their overall ability" (Bryant-Jones, Shimmins, Vega, 2003). Even though music classes are being offered in even more schools, they have a negative connotation. "Music is universal and can open magnificent doors for young people" is an exemplary quotation for kids' lives (Behar, 2000). The use of background music in today's schools is commonplace. The impact of music on the lives of today's modern adolescents has been documented in numerous studies. For this effort, the idea was for students to learn through music. According to studies, music in the classrooms improves students' capacity to think independently, their attitude toward learning, and their level of enthusiasm. Instructors and learners of all ages will get something from this research, I'm sure. Learn about a revolutionary method of instruction that has the chance to reach remarkable results inside the classrooms there. If it assists students with ASD do better in school, music could have a beneficial impact on their overall success. People with ASD can benefit from listening to music. Increased motivation and a more upbeat outlook on life can help learners stay focused. Music can enhance a child's education and achievements, but perhaps the essential advantage is that it teaches them anything unique. When studying, pupils who hear music recall more about what they're looking at (Lewis, 2002). Patience can result in better completing activities and assignments and an increase in classroom engagement in an inclusive setting. Pupils who are exposed to music in the classrooms are more likely to succeed academically. Listening to children can improve their focus and lessen the number of interruptions they make. According to popular belief, music can evoke various feelings such as surprise, amazement, and inventiveness (Davies, 2000). A combination of these elements helps pupils improve overall exam scores and academic achievement in an inclusive classroom settings.

The Concept of Music Therapy

MT has been around since the beginning of time about treating humans (Clair & Memmott, 2008). Therapies that utilizes music helps people with several physiological, cognitive and behavioral problems has been named MT. MT is suitable for children and adults with ASD or sickness since it improves their life quality. MT offers various benefits, such as mental, pain reduction, emotionality, and greater frequency." (George L. Duerksen, 2014). A secure and effective way and an elevated emotional state are only certain of the several MT goals. From an academic sense, this is a fantastic strategy. Listening, singing, making music, or even creating music are all instances of MT. Regardless of prior experience, anyone is welcome to attend. It was practically hard to evaluate cooperative and consulting approaches since MT tasks were clearly or directly tied to pupils' IEP goals, as per the investigation (Register, 2002). MT has been extensively studied for children with ASD (Boxill, 1985; Bunt, 1994; Bunt & Hoskyns, 2002). MT is legal and commonly known around the world in this statement. As a therapeutic intervention, MT has been demonstrated to be successful and accepted by the healthcare world. Recent studies and extensive use of the treatments around the globe convince me that MT is an effective therapy option. Instead of teaching or producing a certain level of cognitive competency, this type of MT in learning is focused on developing non-musical capabilities. There are strict ethical guidelines that all therapists feel an obligation to maintain their integrity. In an MT circumstance, young people pay more attention to what is going on around them. Despite their apparent incapacity or neurological disorder, they seem to adapt to music (Gantt, 2000; Nordoff & Robbins, 1977; Sacks, 1995). Jellison (2000) undertook an in-depth analysis of music studies with challenging adolescents and found no noticeable variations in musical abilities between those with and without disabilities. There's room for solutions when it comes to translations and localizations. People's music tastes are ambiguous, and new measures are required to address this issue. Whenever it comes to music, it's all about the listeners, and this is where MT succeeds. MT is getting increasingly popular around the world, and the future of MT is bright. For non-musical purposes, MT uses music and its elements as a non-verbal mode of communication. Since many ASD youngsters are unable to communicate effectively, MT is an excellent treatment option. It is essential to research MT because it is a geographically practical approach. As well as giving valuable information about MT as a subject, this research aims to practice music to help children with ASD improve their communication and social skills within the situation of their own culture. For children with ASD and their families, MT's ability to promote society's fitness and welfare is advantageous in inclusive classroom settings.

Music Therapy for Students with ASD

Music and MT are interrelated from a young age, as per studies on the two areas. Beat, rhythm, velocity, and tempo are examples of music elements that contain innate basic math, such as spatial configuration and

sequences, numerals and connection. Considering many studies based on daily learning opportunities and the vital role patterning plays in reading ability and science and mathematics growth, as well as the necessity for a lovely setting during the early days, it is apparent that music has significance both at home and in the classroom. Music is a children's first exposure to pattern identification, and it can excite their interest in arithmetic even if children don't view it as such. Even the newest children can be involved in reading and math through music, a social, natural, and acceptable behavior strategy. This study presents several ideas on how to make mathematics more fun for the kids by the usage of music (Geist, Kamile; Geist, Eugene A.; Kuznik, Kathleen, 2012). Daily during this study, we observed two young children with ASD in their classroom. During the weekly welcome ceremony, teachers were taught how to perform every children's song. Enhance a well of all people, institutions, households, and society by using new methods of communication, such as new MT and its components. There are ethical issues for the cultural setting of every MT activity (WFMT 2011). Furthermore, there appears to be a flow in the usage of MT programs for students with ASD (Reschke Hernández 2011). A study by Wigram et al. (2002) suggests that MT may be helpful for people with ASD, problematic behavior, social skill deficits, and other associated mental disorders. Since the 1940s, MT has been used to treat children with ASD (Reschke-Hernandez, 2011). For the former 70 years or so, there have been discussions about treating children with ASD. As far back as the 1940s, MT was used to treat children with ASD. American Music Therapy Association (2005): "The rehabilitative and scientific proof use of music. A trained physician who has completed a certified MT program can use melody endeavors to achieve specific goals and target efforts. Its description is a form of MT that contains a comprehensive choice of musical approaches and styles in the therapy session. People with ASD want more MT, according to an online survey of therapists who work with this population. Trained clinicians choose treatments that have been scientifically established (Kern, 2013). Many decades of research have proven that MT can benefit autistic children of all abilities (Reschke-Hernández, 2011; Simpson and Keen, 2011; Wigram, 2006; and Whipple, 2004). In adding to execution, improvising, composing, and other kinds of music expressions, MT employs a wide range of forms of music. Different meeting forms can also be used based on the therapy's goals. There are apparent advantages to participating in MT in a group environment: the ability to meet new people (Ghasemtabar et al., 2015; Jemison, 2010; LaGasse, 2014). The MT encourages the development of close family ties (Ghasemtabar et al., 2015; Jemison, 2010). Several studies (Thompson, McFerran & Gold, 2014; Thompson & McFerran, 2015) have examined the impact of various factors on a person's mental health. Individual therapy programs allow the therapist to focus solely on the patient, concentrating on specific functional concerns (Lanovaz, Rapp, Maciw, Pregent-Pelletier, Dorion, Ferguson, & Saade, 2014; Vaiouli, Grimmet, & Ruich, 2015; Simpson, 2010). There is increasing evidence that persons with ASD are benefiting from MT. To improve social and neurocognitive abilities, it can be employed. Students with ASD can benefit from MT. People with ASD can make use of it to engage in social interactions and relieve stress. Music has a positive effect on developing both mental and physical talents since it activates so many senses. Depending on a child or family's age and circumstances, various strategies and instructional approaches can meet their different requirements. People with ASD are more effective in the classroom when there are set routines, norms, and expectations. Children with ASD exposed to music and MT have advanced levels of engagement and are healthier able to take their needs and needs. Music and MT can help children with autism learn and experience life by boosting their self-reliance, human touch and social contact. Using themes in schools to advantage students study effectively in an inclusive classroom setting.

Music Therapy to Enhance Social Skills

Good social skills are essential for happy family life, academic achievement, and a fulfilling career (LaGasse, 2014). In adding to McEvoy and Odom, Allan Lovaas (1987). Persons with ASD frequently begin a relationship with that person to achieve their own goals (Scheuermann & Webber, 2002). Studies investigating the effects of MT on social skills in kids with ASD used a wide variety of MT approaches. These studies (Gattino et al. (2011); Ghasemtabar et al. (, 2015); Fayyaz et al. (, 2015); are instances of studies that employ highly established scales (2014). One method was implemented in many of the research, despite using clinical assessment and classification (Thompson et al., 2014). Music is utilized to build a stronger relationship between the therapist and client, promoting physical, academic, social, and emotional well-being (Bunt, 1996). MT is all about building a connection with someone else through music. Seeing our people interact with the music and the problems that may arise from that engagement is a fascinating experience (Bunt, 1996). People with ASD can benefit from MT in a diversity of ways, according to extensive studies. This list of outcomes includes greater participation, decreased autistic spectrum behavior, increased emotional sensitivity, and social skills such as shared social recognition, greetings activities and engagement. Additionally, MT can help people with ASD better understand their thoughts and feelings (LaGasse, 2014). MT can be a "useful and adaptable therapy" method since it could be used in various ways and settings and since it is controlled and inventive. The sort of MT employed depends on a variety of factors, including the aims of the patient, their abilities, and the therapy

situation. Public and one-on-one MT are both methods for learning languages (Stropel & Huppman, 1997). Studies indicate that MT can be used in a broad range of diverse contexts (O'Kelly J, Fachner JC, Tervaniemi M; 2016). Social skills are essential when it comes to success at home, school, and career (Lovaas, 1987; McEvoy & Odom, 1987). To meet their own particular needs, people with ASD are recognized to participate in social contact (Scheuermann & Webber, 2002). According to a modest series of studies, MT improves overall a wide variety of social skills. As an outcome, the social aspects of music are now part of polishing these skills. Children's social skills can be improved by getting them interested in a sport. It is totally up to the student whether or not they choose to participate in MT with a specialist and other children. The next step is to establish a link between both the music therapist and the other pupils and the music itself. A young person must have an equitable and trusted relationship with their educator to learn new social skills as an illustration. When it comes to treating children with ASD, MT has become incredibly common. In way to involve in daily life, it is essential to have decent social skills. MT may decide to work one-on-one with a severely autistic person. One-on-one music therapy allows autistic people to learn to play instruments for the first time; later, they can join the treatment in duets using the equipment. A group MT session will allow them to practice the social skills they learnt in the individual facility when they are ready. As a warning, this process may take weeks or even months for each person in an inclusive classroom setting.

Music Motives Students with ASD

If there's music playing, students are much more likely to pay attention and develop new ideas. One cannot deny that music significantly impacts students who otherwise might drop out of high school. Music played in the backdrop helped some students succeed in school. Children's concentration and cognitive ability improve as a result. It has been demonstrated that students' rising attention can be increased by using current music in the classrooms (Lewis, 2002, p. 19). An instructor used lively music to get students' attention as they entered the classroom (McGovern, 2000). It's a terrific way to start a day off properly by playing some upbeat music as soon as the kids arrive and begin to load their backpacks. Having a great day starts with listening to upbeat, uplifting music. The music helps to awaken a child's focus by rousing their attention. One youngster says that listening to music in the mornings helped him get out of bed and prepare for the day (McGovern, 2000). It just took a few minutes for the children to notice the effect of backing music in the classroom (Lawrence, 2001). As a result, they're less inclined to desire to study hard, earn good grades, be active, and stay focused. Music from a film's score might help set the mood for a fun day with the kids. The musical can be used in various ways to interest students in the classroom (McGovern, 2000). Encouragement music was played throughout the afternoon and evening when pupils became more agitated and restless (McGovern, 2000). As the day progresses, the pupils' energy levels begin to dwindle significantly. The work and learning process has not yet been completed. Pupils may be inspired to end the day on a more positive note if the correct music is played. Many traditional psychological therapies are verbal, including talk restructuring, behavioral therapy, and coping methods. Supplemental and occupational therapists techniques are used as an alternative approach to problem solving and therapeutic. Another one of those esoteric therapeutic options is M.T. (mind-body therapy) (Aletraris L, Paino M, Edmond MB, Roman PM, Bride BE, 2014). Captivating music can raise a child's state of stimulation, leading to better moods and a greater desire to carry out prescribed responsibilities. An inviting atmosphere may motivate students to participate in their education, which may lead to improved emotions, higher alertness, and a stronger desire to study. As an outcome, students are motivated to learn in an inclusive classroom setting.

CONCLUSION

The inclusion of music and other tactile materials and recognized patterns has been shown to boost student involvement. In cases where they may be unable to do so using only one method, pupils benefit from music in the classroom. ASD teens were first hesitant to engage in therapy since they feared being evaluated by their classmates and experts. Their actions demonstrated a lack of confidence and a lack of experience. This meeting was presented as though it were a part of an ongoing series. The first step for the group was to strengthen their bonds with one another. There was an increase in openness and participation among those who had the therapy above. Gender dynamics were examined via the perspective of peer relations. When it came to making new mates, the boys had an advantage over the girls. In the long run, it's no longer necessary to have such a wide disparity. MT sessions resulted in considerable gains for autistic children in areas like spin and character and team cohesion and judgment. Many ASD students will benefit from music and MT therapy. Students' engagement has been proven to increase when music as well as other sensual items, as well as known patterns, are included. Pupils gain from the use of music in the classrooms when they cannot do so using only one way. It is challenging for children with ASD to communicate verbally and nonverbally with others. Children with ASD can benefit from adopting the MT plan to enhance their verbal and social abilities. The social and

communicative abilities of teenagers with ASD were improved by a variety of MT in this study. Due to their fear of being judged by their classmates and specialists, teenagers with ASD were reluctant to participate in the procedure. Naivety and fear were evident in their demeanor. The movies showed how each session was built on the one before it. For starters, the squad needed to develop stronger ties with each other. They began to open up and become more involved as a result of the therapy described above. Peer relationships were used to examine gender differences. The boys had an advantage over the girls when it came to finding new friends. There is no longer any need for this inequality because of the passage of time. According to the research, teens with ASD showed some progress in turn-taking, self-expression and group cooperation, decision-making, and acceptance of others' differences after music therapy sessions.. Even if a strategy fails, one can learn a lot from it. Those with ASD may have a chance to listen to and understand music. Music and MT can help kids with ASD be more successful since they elicit good reactions from those who engage with them. Students with ASD may benefit from more study that includes larger sample size and older people. Most pupils could benefit from the inclusion of music in inclusive classrooms settings.

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METHODOLOGY TO ENHANCE THE SATISFACTION INDEX FOR IT USERS AT UPES

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ABSTRACT

The paper is focused on the IT Services available for end-users in the University of Petroleum and Energy Studies UPES, Dehradun. The research is based on a qualitative as well as the quantitative approach in which online surveys were conducted and data gathered for further processing. The survey data was captured through questionnaires from more than 700 users who are availing of various IT services. The survey was conducted in January 2018 and July 2018. After analyzing the processed data through the first survey results, the weak areas of IT services were focused on and then were improved as per the end-user feedback. Then to calculate the satisfaction index of the IT users the next survey was conducted after six months in July 2018. The same methodology was adopted to analyse data that was gathered from the second survey. The process data was then compared with the first survey results using a statistical approach. It has been observed that user satisfaction was better in the second survey. The satisfaction index is computed for both surveys. The up-gradation of various IT services reflects that the satisfaction level of end-users are also improved and a satisfaction index of 0.13 has been seen when comparing both the survey results. The result was as per our expectations and from this, it can be concluded that end users are very much dependent on IT services for their routine job works. The IT services have played a vital role to increase the outcome of the end-users performance and this reflects through the satisfaction indexed computed through the data gathered from biannual surveys.

Keywords: IT Services, Online surveys, UPES, user satisfaction, satisfaction index

1. INTRODUCTION

University of Petroleum and Energy Studies, UPES is a leading university of India that offers various domain specialization programs. It is NAAC 'A' and the top 100 NIRF ranking university of India. UPES provided the best of world-class education with academic infrastructure, modern research lab facilities, multimedia-enabled classrooms, for curricular and extracurricular activities.

The university provides diversified courses in the fields of Computer Sciences, Engineering and Technology, Law, Design, Management, Modern Media and Health Sciences. UPES has more than a thousand quality faculties and staff who are sincere and dedicated to aligning the UPES vision and mission for society. The office of Information Technology is offering its services to all UPES users and is also SOX Compliance. The common services of IT that users are leveraging includes the Internet, Intranet, Mailing, Learning Management System, Printing, networks and other IT-related support. An automated helpdesk <https://upes-hd.ddn.upes.ac.in/upeshd> [1] is deployed in UPES which is a single-window system to contact for all the queries raised by users. The calls raised by the users are categorized into incident and service based on the severity of the issue. Each issue raised by the users has a specified response and resolution time associated with its category. All users can reach the helpdesk through the following procedures:

1. Users can call the helpdesk from their telephone extensions.
2. Users can personally visit the helpdesk.
3. Users can log a call through the online portal <https://upes-hd.ddn.upes.ac.in/upeshd>.

When a user raises the issue through logging a call in the helpdesk, then they will get the issue reference number that can help the user to trace the logged ticket status till its satisfactory closure.

The main goal of IT services and its huge infrastructure deployed is to maximize the profit of its stakeholders which will be directly proportional to organizational growth. IT adoption will help in increasing throughput by IT staff revitalization, resources mobilization, process restructuring to serve users better and thus performance also gets better.

2. LITERATURE REVIEW

The IT service is considered the backbone of any organization. The downtime of IT services directly affects its business and these days standard of 99.999 of uptime has been made as the benchmark for it. The adoption of IT

and its dependency requires raising the profit and growth of the organization and all its stakeholders. From the previous studies, it has been observed that IT made a major changeover through total end-user satisfaction and brought a radical improvement in organizational performance [2].

The leading industries of any country rely on the availability of skilled professionals and depend on the successful implementation of advanced technologies and software applications. But a quantitative and qualitative imbalance of trained professionals varies according to business cycles, rapid advancements in technology and demographic factors [3].

Organizations and Indian firms are urgently required to hire professionals fluent in adopting an IT digital work environment to keep pace with and an ever-changing business needs for introducing their next-generation products [4].

The delivery of services for the IT sector is the collaborative approach of specific proficiencies in the IT and business domains that are defined by this customer-centric perspective. Now, IT needs frequent updates through a digital environment for any business where the dynamic needs of the business demand IT-enabled solutions from their service providers to work along changing environments. In this context, IT solutions become increasingly “servitized” [5].

The capital relational impact on the satisfaction level of IT users correlates from both the perspectives i.e. users and IT departments. When users and IT support have a significant amount of cooperation and respect for one another, then both IT professionals and users may have a great desire to share information among others. As a result, they will be able to earn a lot of respect and will be able to expect similar returns in the future [6].

However, much researches in IT services signifies the importance of building trust between IT professionals and end-users [7]. Periodical training sessions for end-users improves IT usability, perhaps deliver the best IT services, and surely meet the expectations of user desires.

The IT department must conduct time to time study for the evaluation of the satisfaction of its end-users. Through this type of study, the improvement in the IT services can be enhanced and hence performance will be increased.

3. DESIGNED AND ADOPTED METHODOLOGY

To conduct the study both qualitative and quantitative approaches were used. In the qualitative approach, theoretical literature from different sources is read which helps to make a framework for questions [8]. Perception meetings with users were also conducted to find out the pain areas. A set of 10 questions were prepared to keep all the points into consideration. After this quantitative approach was applied and is performed by survey questionnaire. The methodology adopted is shown in figure 1.

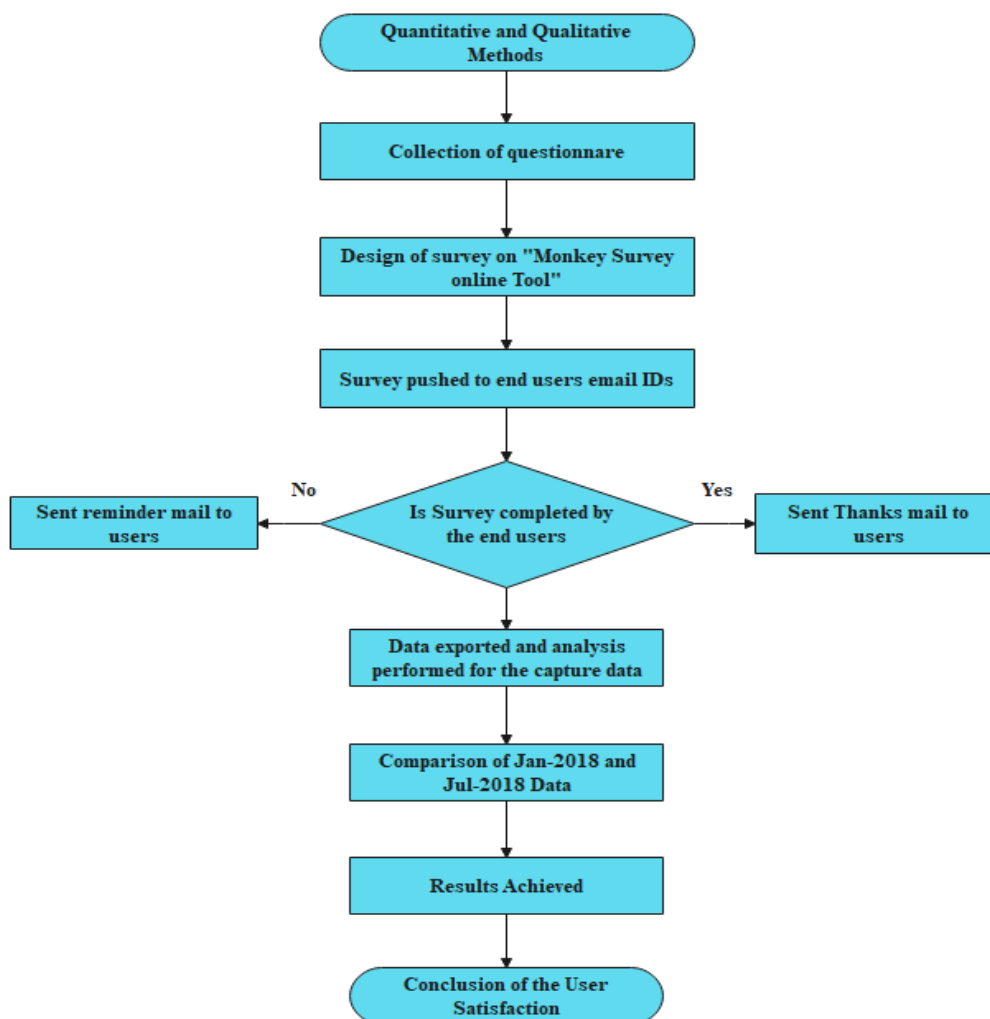


Figure 1: Designed and adopted methodology

The top-down approach is followed to implement this research methodology to calculate the satisfaction index for the year 2018. The same has been presented further below.

- The survey was administered in online mode (Survey Monkey). www.surveymonkey.com [9].
- Data of end-users were collected from HR. HR extracted the data from the HRM module of the SAP application. <https://sapep.delhi.upes.ac.in:50401/irj/portal> [10]. The First name, Last Name and Email id of users are taken from the HRM module. University of Petroleum and Energy Studies is using five modules of SAP: (Human Resource Management) HRM, (Student Lifecycle Management) SLCM, (Finance and Controlling Module) FICO, (Finance and Contract Accounting) FICA, and (Material Management) MM.
- This data is uploaded to the tool (Survey Monkey) in the .csv format.
- Each end-user was sent an individual mail to participate in the survey. Office365 is the Exchange server that was used to send the emails. <https://www.office.com/> [11].
- Automated thanks mail was sent to all the users who have completed their survey.
- All those users who haven't participated in reminder mail were sent on the specified date and time configured on the survey tool.
- The reports are extracted from the tool in ".csv" format.
- Results have been evaluated independently for each section from the ".csv" format.
- Statistical Mode, Average & Standard Deviation from the Mean have been used to derive the overall satisfaction levels these were calculated through excel.
- The choice "Neutral" has been considered as an indicator of "No Relevance" or "No Awareness" about the service. However, the score of "Neutral" is used to derive the overall satisfaction index.

- The satisfaction levels range between 1 to 7 where 1 stands for “Very Dissatisfied”, 2 for “Dissatisfied”, 3 for “Somewhat Dissatisfied”, 5 for “Somewhat Satisfied”, and 6 for Satisfied “Satisfied and 7 for “Very Satisfied” as shown in figure 2.



Figure 2: Satisfaction Level Range from 1 to 7

- The survey scores have been evaluated vertically and horizontally. A vertical evaluation refers to a question wise scrutiny of all responses received and a horizontal evaluation refers to a user wise scrutiny of responses. As shown in figure 3.

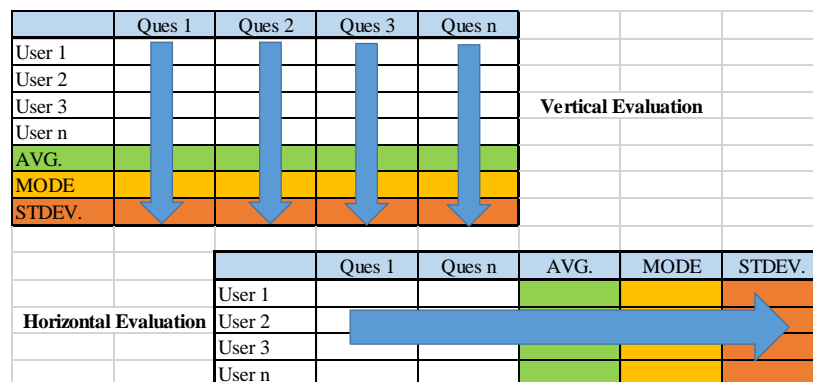


Figure 3: Vertical and Horizontal Evaluations

- Horizontal evaluation is based only on the averages of scores on the 10 questions answered by the users. The scores of 1 through 7 have been substituted by -3 to 3 with 0 as the “Neutral” choice.
- All the questions which were skipped by users are considered neutral.
- Crucial Parameters are taken as per table 1.
- Derivation for these survey results is mentioned in the conclusion.

Table-1: Details of the Parameters

| PARAMETERS | Description of the Parameters used during the study |
|-----------------------------|---|
| Responses | Indicates the total number of responses considered to calculate statistical figures |
| Mode | Indicates the response appearing the maximum number of times. |
| Average | An average of the responses given for a particular question. |
| Standard Deviation | Indicates the degree of deviation from the average. |
| Satisfaction Range (SR - +) | Derived by subtracting and adding standard deviation from average. |
| Satisfaction Index | An Intuitively derived whole number ranging between 1 and 7. Depending on the satisfaction range. |

4. ANALYSIS OF THE SURVEYS CONDUCTED

The analysis of both the surveys conducted in January 2018 and July 2018 was performed using Vertical as well as Horizontal Evaluations.

4.1. Vertical Evaluation

The analysis of the first survey was done in Jan 2018 using the vertical evaluation technique and is shown in Table 2.

Table-2: Vertical Evaluation for January-2018

| Ques. No. | Responses | Mode | AVG | STDEV | SR- | SR+ | SI |
|---------------------|-----------|------|------|-------|------|-----------|-------------|
| 1 | 819 | 6 | 6.15 | 0.96 | 5.18 | 7.11 | 6.15 |
| 2 | 819 | 6 | 6.22 | 0.89 | 5.33 | 7.11 | 6.22 |
| 3 | 819 | 6 | 6.13 | 0.97 | 5.15 | 7.1 | 6.13 |
| 4 | 819 | 6 | 6.01 | 1.09 | 4.93 | 7.1 | 6.01 |
| 5 | 819 | 6 | 6.04 | 1.02 | 5.02 | 7.06 | 6.04 |
| 6 | 819 | 6 | 5.94 | 1.09 | 4.85 | 7.02 | 5.94 |
| 7 | 819 | 6 | 6.13 | 0.97 | 5.16 | 7.1 | 6.13 |
| 8 | 819 | 6 | 5.54 | 1.36 | 4.19 | 6.9 | 5.54 |
| 9 | 819 | 6 | 5.97 | 1.04 | 4.93 | 7 | 5.97 |
| 10 | 819 | 6 | 6.03 | 0.97 | 5.06 | 7.01 | 6.03 |
| January-2018 | | | | | | SI | 6.02 |

The outcomes observed after vertical evaluation of the January 2018 survey are presented as below:

- More than 800 end-users participated in the survey of January 2018.
- The Mode was computed for all ten questions.
- The result of mode is 6 which indicates that maximum users are satisfied with the IT services.
- The average response of seven out of 10 questions is more than or equal to 6 but three questions are having less than 6.
- Standard Deviation of as high a value of 1 and above indicate a good level of dispersion of the data about the average and have led to a high SI score in a few cases as it is 6.22.
- SI for nine questions is calculated as “*Satisfied*” and for one question, it is “*somewhat satisfied*”.

The analysis of the survey conducted in July 2018 is shown in Table 3.

Table-3: Vertical Evaluation for July-2018

| Ques. No. | Responses | Mode | AVG | STDEV | SR- | SR+ | SI |
|------------------|-----------|------|------|-------|------|-----------|-------------|
| 1 | 783 | 6 | 6.3 | 0.86 | 5.45 | 7.16 | 6.3 |
| 2 | 783 | 7 | 6.35 | 0.81 | 5.54 | 7.16 | 6.35 |
| 3 | 783 | 6 | 6.23 | 0.9 | 5.33 | 7.13 | 6.23 |
| 4 | 783 | 6 | 6.12 | 1.02 | 5.1 | 7.14 | 6.12 |
| 5 | 783 | 6 | 6.15 | 0.91 | 5.23 | 7.06 | 6.15 |
| 6 | 783 | 6 | 5.98 | 1.1 | 4.89 | 7.08 | 6.03 |
| 7 | 783 | 7 | 6.22 | 0.96 | 5.26 | 7.18 | 6.25 |
| 8 | 783 | 6 | 5.8 | 1.18 | 4.62 | 6.97 | 5.8 |
| 9 | 783 | 6 | 6.1 | 0.95 | 5.14 | 7.05 | 6.13 |
| 10 | 783 | 6 | 6.14 | 0.88 | 5.26 | 7.02 | 6.14 |
| July-2018 | | | | | | SI | 6.15 |

The outcomes observed after vertical evaluation of the July 2018 survey are presented as below:

- More than 775 end-users participated in the July 2018 survey.
- The Mode of response to eight questions out of ten is given as 6 which indicates that users are satisfied.
- The remaining two questions out of ten are rated as very satisfied as shown in table 3.
- The average response for eight questions is more than or equal to 6 but two questions are having less than 6.
- Standard Deviation of as high a value of 1 and above indicate a good level of dispersion of the data about the average and have led to a high SI score in a few cases it is 6.35.

- SI for all ten questions calculated as “Satisfied”.

4.2. Horizontal Evaluation

The average of responses to all the questions answered by a user is used to evaluate the overall satisfaction of the user. Only considering the averages, a little above 92.79% of user falls in the satisfied category. Figure 4 shows the number of users with their average and their satisfaction level. Figure 4 also shows that only 7 users are completely dissatisfied with the IT services. Figure 5 shows Horizontal Evaluation for July 2018 that 94.24% of user's falls in the satisfied category and only 3 users are dissatisfied with the IT services.

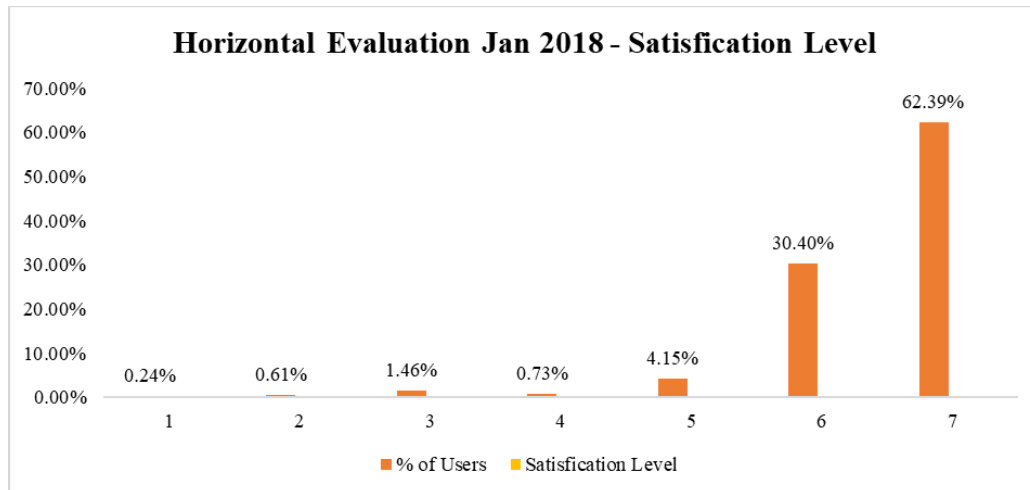


Figure 4: Horizontal Evaluation for Survey Data conducted in January-2018.

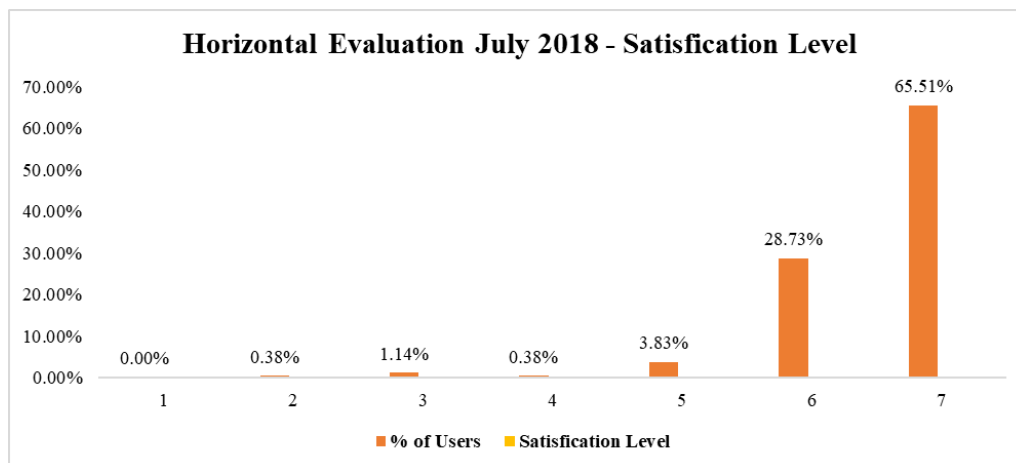


Figure 5: Horizontal Evaluation for Survey Data conducted in July-2018.

5. RESULTS

Equation 1 depicts that the satisfaction of the users was increased in the second survey. The Satisfaction Index (SI) of the first survey was 6.02 and in the next survey, it increases to 6.15. The FSi represents a satisfaction index for the survey conducted in January 2018 and SSi represents the satisfaction index conducted for the survey in July 2018.

$$\left\{ \begin{array}{l} FS^i = 6.02 \\ SS^i = 6.15 \\ SI = SS^i > FS^i \end{array} \right\}$$

Table 4 and Figure 6 shows the comparison of STDEV and SI for the January 2018 and July 2018 user satisfaction index. The graph shows that in the second survey Satisfaction Index is higher as compared to the first survey.

Table - 3 Comparative analysis of STDEV and SI comparative for Jan-2018 and Jul-2018.

| Survey Months | January-2018 | | July-2018 | |
|---------------|--------------|------|-----------|------|
| Ques. No. | STDEV | SI | STDEV | SI |
| 1 | 0.96 | 6.15 | 0.86 | 6.3 |
| 2 | 0.89 | 6.22 | 0.81 | 6.35 |
| 3 | 0.97 | 6.13 | 0.9 | 6.23 |
| 4 | 1.09 | 6.01 | 1.02 | 6.12 |
| 5 | 1.02 | 6.04 | 0.91 | 6.15 |
| 6 | 1.09 | 5.94 | 1.1 | 6.03 |
| 7 | 0.97 | 6.13 | 0.96 | 6.25 |
| 8 | 1.36 | 5.54 | 1.18 | 5.8 |
| 9 | 1.04 | 5.97 | 0.95 | 6.13 |
| 10 | 0.97 | 6.03 | 0.88 | 6.14 |

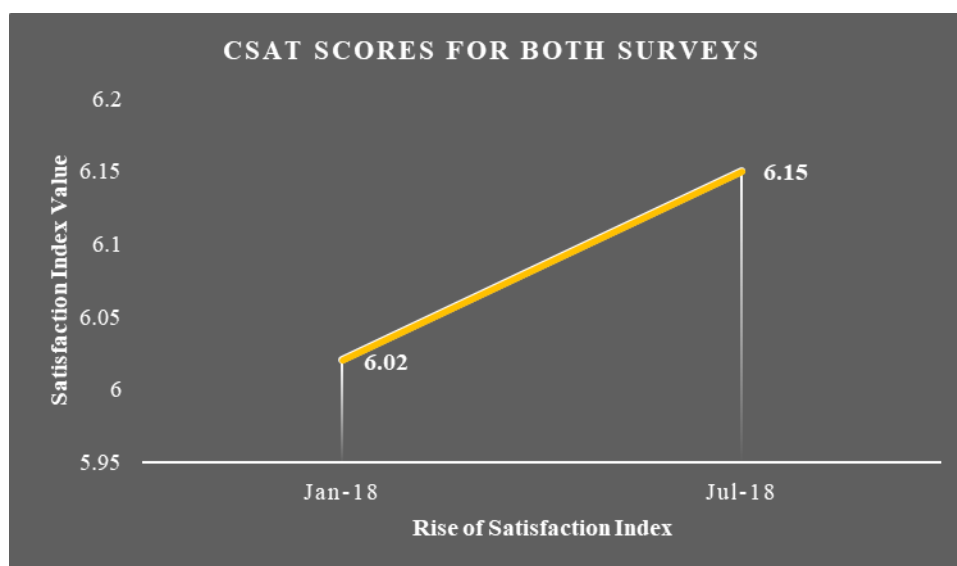


Figure 6: CSAT Index with the comparison of STDEV & SI for January and July 2018.

The outcome of improved user satisfaction was achieved because of the initiatives done by IT after reviewing the January 2018 survey.

i. Firewall:

- Few rules were created in Firewall for dedicated bandwidth for users.
- Changes were done on content filtering categories which help end-users to access the internet smoothly.

ii. Systems:

- Systems were patched with the latest patches.
- RAM of systems was upgraded to 8GB. The system performance has increased.

iii. Helpdesk:

- SOP of helpdesk was prepared and shared with users which help them as a guide to log a call.
- Training and motivation were also given to end-users.

iv. Internet:

- One more internet connection was taken. Now the University has a primary and secondary Internet connection. If one goes down the load is shifted to another connection.
 - The bandwidth of the Internet was increased from 1024Mbps to 1334Mbps.
 - Now there was two ISP's in UPES.
- NKN: 1024Mbps

ii. Vodafone: 310Mbps.

6. CONCLUSION

The research paper focuses on the end-user satisfaction who are availing of IT services at UPES. From equation 1 it can be concluded that the satisfaction index of July 2018 is greater than the SI of the January 2018 survey. So, the authors are stating that Satisfaction Index can be increased by achieving the end-user satisfaction level through improvement in IT services. In this study, the rise of the 0.13 satisfaction index has been achieved. Hence, it is very important to review and improve the IT services of the organization from time to time because it's a continual process of improvement.

This research adopted a new methodology that is based on vertical and horizontal evaluation for better accuracy of the results to calculate the satisfaction index. Through this research article, the authors wish to suggest IT departments of all organizations that such types of surveys and their review are very necessary for ensuring the pace with ever-changing business expectations and to increase the growth of the organization.

As the satisfaction index of end-users will increase towards IT services, the users will focus more on their core duties which will have a direct positive impact on the organization's goal.

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19th CENTURY BELGAUM -SOCIAL CULTURAL GROWTH - A CRITICAL STUDY:**Kakasaheb Laxman Gasti¹ and Dr. S. Y. Mugali²**Research Scholar¹ and Professor & Chairman², Department of History and Archaeology, Karnatak University, Dharwad**ABSTRACT**

The paper introduces Belgaum as a district of Karnataka having several aspects of multi-dimensional growth through the centuries. At present, Belgaum, being a border district naturally provided with forests and rivers, is known for its composite culture. On one side, it is familiar with Goan culture; on the other, it is well-known for its Marati influence. Nevertheless, it is a Kannada region occupied by Kannada speaking people, a few 'tribal tandas' (tribal hamlets), and its people known for patronising all religions, languages, and socio-cultural practices and is the best example of composite culture.

Key words: Valligame, religion, culture, languages, tandas, Christianity, Islam, tribes, movement, Portuguese.

INTRODUCTION:

Belgaum is one of the prominent districts of northern Karnataka, shares a border with Maharashtra and Goa. Being part of Mumbai Karnataka during the pre-independent period, it was exposed to Portuguese culture and has mixed Kannada, Konkani, Marati and Islamic cultures. These factors are responsible for a strong base for multi-cultural development. Belgaum is a Kannada region surrounded by Marati speaking areas. It was part of the Marata as well as Muslim rule, under the Shahi sultans in the surrounding areas, and local chieftains at Sangli, Athani, Kittur. It underwent a drastic change in its cultural field due to the interaction of all these forces. Thus, it opened itself to different influence through the centuries, especially during the 19th century as the district was opened to the spread of western education, western thinking and their impact. Belgaum has the distinction of conducting a session of the national Congress in 1924, in which Mahatma Gandhi was presided over. Thus, it led to the foundation of Congress Sevadala.¹

The location of the district itself is a strong motivating factor for this district to have a composite culture. It is bordered by Goa with strong Portuguese influence and Konkani language, Maharashtra with Marata regime, Kannada as the state which it belongs to. No wonder all these factors did influence the socio-cultural fields of this border district, which have its own distinct features, food habits, rituals, pilgrim places etc.

The place is familiar as Belgaum, Belagavi, Belagaum. Inscriptions refer this place as 'Valli game' or 'Balligave' a kannada term denoting a region of creeper plants with a long period of recorded history.² Another reference to this region is Velugrama, which may be a Sanskritised version of Valligame.

Enriched by the Malaprabha, the Gataprabha, and the Hiranyakeshi rivers along with the Krishna rivers, and is known for its agricultural prosperity. It was part of the Peshwa rule for a long time. Many of its chieftains had allegiance with the Peshwas of Poona. Strategically placed, it had thick natural forests of Khanapura, Jhamboti, Kanakumbhi forests and the ghat inclining down to the coast of Goa and Konkan. Plenty of natural resources and mining makes it a rich geographical region. Elevated hill regions, descending waterfalls, and open green, pastures make it a famous tourist destination. Dating from a pre-historic period, the district has continuity in history and tradition.

The 19th century Belgaum (gau in Hindi and marati means village or grama in kannada) is a mixture of socio-cultural habits. The developments were fast and leading to multi-cultural, multi-dimensional growth of the region. They can be studied under the headings like education, awakening, and renaissance. Administratively, it was part of the Mumbai Karnataka or Canara region, and was under the British rule.³

Education:

The Mumbai government had given predominance to the spread of education, especially western education. Fortunately, several Christian missions rendered yeoman service to the cause of education. The 19th century witnessed widespread activity in the field of education and was far ahead of other provinces in this field. British contribution in the field of education is visible as there were around 187 government schools in this division by 1882-83.⁴ It is a credit to observe that among the boys of the age 6-14, 4.49 % were admitted to school.

Educational policy of the British through Macaulay's minute of 1835, Woods Despatch of 1854, Hunter Commission (1886) had a strong impact on the educational field. Mumbai Presidency had a strong bias for the spread of education among its subjects. The problem pertaining to border areas like Canara of which Belgaum was a part was the use of language. Marati is the language spoken by the majority of its people in Canara,

Konkani, Kannada and Marathi regions. Locals preferred to have their own languages as a medium of instruction. Belgaum had its first Kannada school in 1838 along with an English school. It is noteworthy how an English officer, John Russell, demanded to have more Kannada schools in Kannada speaking areas and strongly recommended starting Kannada schools in Kannada areas.⁵

Along with his missionary work, Rev. Hands found time to compile a dictionary of Kannada words which later was revived by Rev. Reeve. By this time there were dictionaries in the Marathi language as well.

Domination of Marathi over regional languages:

Domination of Marathi over regional languages in the Mumbai Karnataka region hindered the growth of Kannada schools. But Christian missionaries, Rev. John Hands and John Russell, were responsible for opening more and more schools in this region. They heralded the spread of education, the growth of literature. The Christian missionaries like Catholic Jesuits of Goa, Basel Mission of Germany worked in the interior parts to spread education. Deputy Chennabasappa (Deputy is the post he held in the education department of Belgaum division of the Mumbai province) was another educationist who worked for the revival of the Kannada language in schools. By their effort several schools were started. Lingayat maths was involved in establishing schools and boarding homes.

It has a long period of history leading to multicultural development. The ancient period was dominated by Hindu dynasties like Rattas, Kakkatiyas, Sevunas, Vijayanagara rulers who had their sway over the region for a while but was replaced by the Shahi sultans who ruled from Bijapur. By the rise of Peshwas, the rule of the region was passed into their hands.

Culturally, the district is known for patronising most of the religions, Hindu, Jain, Muslims, Christians, and a larger number of tribal groups like Lambani, and a few nomadic tribes. The influence of social reform movements that were going on in the Marathi territory greatly influenced the region. Phule's Satyashodhak Sangha had a strong influence over the lower strata of the society. Ranade's involvement in social reforms, widow remarriages, and female education found favour with the people here. Tilak had a strong influence through his Shivaji Jayanti and Ganesh mahotsavs.

Religions:

Hinduism: all caste people live here. Lingayats under the guidance of Veerashaiva mathas are the main religion here. Savalagi math, Siddha samsthana have a large following. Brahmins, Jains also have their maths. Tulaja Bhavani is worshiped by the Marathis. Both Catholic and Methodist Christians have their churches. Muslims having their masjids and dargas live here. The place is known for communal harmony. Hindu shrines attract a large number of devotees. Jains have their basadis: There are a few basadis and two monasteries of the Jains at Belgaum. There are two prominent basadis in the city.

Muslims: Came to the region around the 15th century. As usual, Sufi saints who preach religious toleration, love and brotherhood came to Belgaum. Bahamani got control over the region. One of the strong men of the Bahamani named Asad Khan had built a masjid and the Dargas of a sufi saint like Hazarath Badaruddin Arif of Chisti Khanka (Sufi monastery) who settled in the city. Interestingly, the fort he built is also having a Durga and a temple which attracts a large number of Hindus. Hazarat Sikandar Shah wali is another saint who had left a strong influence over the region.

Dargas at Kudachi are important milestones in the religious growth of the region. Hazarath Shaikh Sirajuuddin Junnaid built a famous Darga in 1370, which attracts people of all the communities throughout the year. The annual festival 'Gadda' will be celebrated with pomp and devotion.

Besides, there were a few female sufi saints in Belgaum. One of them was Hazarat Kunja Maa bee a daughter of King Mohammad Shah-I. She became a sufi saint. Her father built a darga in her name.

Christian: Community is another main contributor for the religious harmony. Observations made so far about their contributions to spread of education and awakening resulted in the spread of western education through which awareness and Christianity were added to the composite culture of Belgaum. Christian missions of London mission, Methodists, Catholics established churches. The first church was established in 1852 is Immaculate Conception Church in Belgaum. The later period saw several churches, schools, orphanages constructed. Now a number of Catholic, Methodist, and Baptist churches rendered their service in the district.

One such church is the St. John the Baptist church in Deshanur. It is popularly called 'Santa Stanika Arulappara Virakta Mutt (monastery).⁶ It is peculiar because though it is a church, most of its devotees are Hindus, it is run by Jesuit fathers, they wear a saffron robe and a chain of beads (mala). The church Tabernacle is in the form of

a Shivalinga. It is known for communal harmony and co-living. Well decorated Churches attract a large number of visitors during Christmas time.⁷

The best examples of communal harmony do exist at Belgaum:

Here are two best examples of the people of all religions living happily. One's practice was never a hindrance. Above mentioned Church of St. John the Baptist at Deshanur, where Catholic Jesuit Fathers conduct service, is referred to as a Virakta mutt with a Shivalinga. Though there was not a single Christian family in the village, nearly two hundred villagers attend prayers, along with other Christians.⁸

Like in other places, Dargas usually attract people of all faiths. They work for peaceful co-living. Dargas here are the symbol of communal harmony. People were encouraged to join the mainstream in their surroundings. In a rare example of co-living for the well-being of the villagers and travellers are found at Hukkeri. Here a karanja- (a step-well) is carved out for the benefit of the villagers and travellers. This Karanja is adjoining to a shera or chattra (rest house) and a piece of land was donated for the maintenance of the two. The villa representatives of all communities like: Tailors, weavers, oil-pressers, cobblers, blacksmith, pujars, jyothishis, sweet sellers, barbers, malis along with village peasants etc.

An inscription in Persian and its Marati translation is another slab vouch for this dedicated service.⁹

Linguistically, Belgaum is the best representation of composite culture. Kannada is the state language which the majority of the people speak. Marati is the second important language, Konkani, the languages of Goan Christians. Hindi and Urdu languages are other languages spoken by Kannada speaking people of all castes, religions, Maratis, Goans, Muslims, nomadic tribes like the Bhanjaras who live in tandas (camps), Bhurupis or veshagars nomads, Lambanis, Siddis and other tribes who move from place to place in search of livelihood live here harmoniously.

Journalism (starting of newspapers):

London Missionary Rev. Hands established a printing press and tried to start a Kannada newspaper Samachar (later it was shifted to Mangalore and published as Mangaluru Samachara). By 1883 Belgaum had three to four newspapers, i.e., Belgaum Samachar, 'Karnataka Mitra' and Jnanabhodaka' are prominent.¹⁰ Later on, Journalism grew leaps and bounds and attracted the attention of people. By 1900 there were 36 journals locally published in Kannada, Marati, Urdu and English.¹¹ There were journals on many issues and worked for different causes. The journals started with strong motives, created an atmosphere suitable for social change and helped awakening of the national feelings by which the national movement became strong. Belgaum was in the forefront of the national movement. Along with locally published journals, several journals were also published outside which were popular among people.

National movement:

The national movement in the district could be traced to the rising of Rani of Kittur Channamma and her struggle against English Co. followed by her lieutenants Sangolli Rayanna had immortalised the name of this district. Though there were some skirmishes during 1857 and after, influence of Nationalist leaders, social reformers like Jyothiba Phule, Mahadev Govinda Ranade, Chiplunkar, Gopalakrishna Gokhale was more on the educated class.

The establishment of the National Congress in 1885 was attended by the great leader of the district, Gangadharrao Deshpande. He was in the forefront of Congress agitations and worked constantly for the awareness and awakening, worked for the Swadeshi movement. Tilak's agitations were popularised in Belgaum due to the leadership of Gangadharrao Deshpande.

The national Congress's annual session in 1924 was a golden event in the history of Belgaum. Mahatma Gandhi, who was reluctant to accept the Presidential position of any session, had accepted and was the President of the Belgaum session. It was the only session of the Indian National Congress presided over by Mahatma Gandhi. Gangadharrao and his associates worked hard to make it a grand success. It is here, Dr. N. S. Hardikar was permitted to have his Congress Sevadal.¹² It went on to play a significant role in mobilising the people towards congress satyagrahas, to provide relief during natural calamities and disasters.

Gangadharrao Deshpande looked into every aspect of the conveyance of the delegates and a bawdi or well was dug for drinking water near the venue, it was called Congress well or Congress bawdi.¹³ Later on, the national movement gained momentum and hundreds of volunteers from Belgaum participated in the national struggle and went to jail to liberate the motherland. Here again we see close affinity among the people; educated, illiterate people who left their government offices, lawyers gave up their practices and students, women, labourers, even peasants participated in a large number.¹⁴ The 1924 session at Belgaum was notable for the

beginning of the unification movement for Kannada speaking areas into Mysore. Along with the national movement, the border areas of Kannada speaking areas experienced other people's movement for unifying Kannada speaking areas into a linguistic state such as Karnataka or Karunadu.¹⁵ J.V.P committee and Fazal Ali Committee also have their role in this regard. Border dispute between Mysore State and Mumbai led to animosity for a while. Kannada papers were in the forefront of the agitation. In 1967 Belgaum is united in the State of Mysore. From then onwards, the district contributes to the socio-cultural development of the state and provides ample facilities for the district to have a perfect atmosphere for its composite culture.

CONCLUSION:

Belgaum is a prominent border district of Karnataka state. It has a history of more than 2000 years of growth, inherent socio-cultural growth through the ages, peaceful atmosphere. The influence of Hindu dynasties of ancient period, Muslim rulers of medieval times, Marata rule of 17th and 18th centuries, Portuguese as neighbours, impact of the British rule had their influence over the composite culture in the region. As in other parts, Belgaum had its own effect on renaissance, spread of education, socio-religious reform movement, national awakening. The paper so far had a glance of all these factors responsible for its inclusive growth in all fields.

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GENERALIZED SECOND ORDER DIFFERENCE EQUATION AND INFINITE FIBONACCI

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ABSTRACT:

In this paper we extend finite second order q -Fibonacci formula to infinite second order q -Fibonacci formula and also obtain the sum of infinite second order q -Fibonacci multi-series formula.

Key words: Fibonacci number, second q -difference equations summation solution, Infinite Multi-series

AMS subject classification:39A13,39A10,47B39

1 INTRODUCTION

The theory of Fibonacci sequence $0, 1, 2, 3, 5 \dots$ where in each term is the sum of the two proceeding term has found to fit a large variety of real life growth processes. The generalized Fibonacci numbers as for fixed a and b the succeeding terms of the sequence A_n , with initial values $A_0 = 0$ and $A_1 = 1$ are determined by $A_{(n+2)} = aA_{(n+1)} + bA_n$.

$$\sum_{r=0}^{\infty} F_{\beta,r} u\left(\frac{e^x}{q^{r+2}}\right) = \Delta_q^{-1} u(e^x) - F_{\beta,m+1} \Delta_q^{-1} u\left(\frac{e^x}{q^{m+1}}\right) - \beta_2 F_{\beta,m} \Delta_q^{-1} u\left(\frac{e^x}{q^{m+2}}\right)$$

Here we formulate higher order q -difference equation.

$$\Delta_{q_1} \left(\Delta_{q_2} \left(\dots \dots \Delta_{q_t} (v(e^x)) \dots \dots \right) \right) = u(e^x), e^x \in (-\infty, \infty)$$

and obtain some result on sum of infinite second order q -Fibonacci Multi-series by equating summation and closed from solutions of the equation.

2 SECOND ORDER q -DIFFERENCE EQUATION

Let $u(e^x)$ be a real valued function on $(-\infty, \infty)$, β, q and β are non zero reals and m is a positive integer.

$$\Delta_{(\beta_1, \beta_2)} = \Delta_q$$

$$F_m = F_{\beta,m}$$

$$\sum_{r_1 \rightarrow i}^m = \sum_{r_1=0}^m \sum_{r_2=0}^m \dots \dots \sum_{r_i=0}^m$$

$$\Delta_{\beta}^{-1} = \Delta_{\beta}^{-1} \Delta_{\beta}^{-1} \dots \dots \Delta_{\beta}^{-1}$$

Definition 2.1 Let β_1 and β_2 be fixed real $\beta = (\beta_1, \beta_2) \in R^2$ and $e^x \in (-\infty, \infty)$. Then the second order q -difference equation $\Delta_{(\beta_1, \beta_2)}$ is defined as

$$\Delta_{(\beta_1, \beta_2)} u(e^x) = u(q^2 e^x) - \beta_1 u(q e^x) - \beta_2 u(e^x) \quad (1)$$

Inverse denoted by $\Delta_{(\beta_1, \beta_2)}$

$$\Delta_{(\beta_1, \beta_2)}^{-1} v(e^x) = u(e^x) \text{ and } v(e^x) = \Delta_{(\beta_1, \beta_2)}^{-1}$$

Lemma 2.2 If $q^{2n} - \beta, q^n - \beta_2 = 0$ for $n = 0, 1, 2, \dots$ then.

$$\Delta_{q, (\beta_1, \beta_2)}^{-1} e^{x^n} = \frac{e^{x^n}}{q^{2n} - \beta, q^{2n} - \beta_2} \quad \text{and} \quad \Delta_{q, (\beta_1, \beta_2)}^{-1} (1) = \frac{1}{1 - \beta_1 - \beta_2} \quad (2)$$

Proof. Replacing $v(e^x)$ by e^{x^n} eqn (2), we get.

$$\begin{aligned} \Delta_{q, (\beta_1, \beta_2)} e^{x^n} &= q^{2n} e^{x^n} - \beta_1 q^n (e^{x^n}) - \beta_2 (e^{x^n}) \\ e^{x^n} &= \Delta_{q, (\beta_1, \beta_2)}^{-1} [q^{2n} e^{x^n} - \beta_1 q^n (e^{x^n}) - \beta_2 (e^{x^n})] \end{aligned}$$

$$\Delta_{q, (\beta_1, \beta_2)}^{-1} e^{x^n} = \frac{e^{x^n}}{q^{2n} - \beta_1 q^n - \beta_2} \quad (3)$$

Again replacing $v(e^x)$ by e^{x^n} in eqn (2) we get,

$$\begin{aligned} \Delta_{q, (\beta_1, \beta_2)} e^{x^n} &= q^{2*0} e^{x^n} - \beta_1 q^0 (e^{x^n}) - \beta_2 (e^{x^n}) \\ \Delta_{q, (\beta_1, \beta_2)}^{-1} (1) &= \frac{1}{1 - \beta_1 - \beta_2} \end{aligned} \quad (4)$$

Hence the Proof

Lemma 2.3 Let S_r^n be the Stirling numbers of first kind $n \in N(1)$, if.

$$e_q^{x^{(n)}} = \prod_{i=0}^{n-1} (e^x - iq) \quad \text{and} \quad \left(\frac{1}{e^x}\right)_q^n = \prod_{i=0}^{n-1} \left(\frac{1}{e^x} - iq\right)$$

for $e^x, q \neq 0$

Proof. We have

$$e_q^{x^{(n)}} = \sum_{r=0}^{\infty} S_r^n q^{n-r} e^{x^r}$$

Replacing by e^x by $\frac{1}{e^x}$

$$\left(\frac{1}{e^x}\right)_q^n = \sum_{r=1}^n S_r^n q^{n-r} \left(\frac{1}{e^x}\right)^r$$

Hence the Proof

Lemma 2.4 If S_r^n is are Stirling number of second kind and $q > 0$ then,

$$\Delta_q^{-1} e^{x^n} = \sum_{r=1}^n S_r^n \frac{e_q^{x^{r+1}}}{(r+1)_q}$$

Proof. we have $e^{x^n} = \sum_{r=1}^n S_r^n q^{n-r} e_q^{x^{(r)}}$

$$\begin{aligned} \Delta_q^{-1} e^{x^n} &= \Delta_q^{-1} \left(\sum_{r=1}^n S_r^n q^{n-r} e_q^{x^{(r)}} \right) \\ &= \sum_{r=1}^n S_r^n q^{n-r} \Delta_q^{-1} e_q^{x^{(r)}} \\ \Rightarrow \Delta_q^{-1} e^{x^n} &= \sum_{r=1}^n S_r^n q^{n-r} \frac{e_q^{x^{(r+1)}}}{(r+1)_q} \end{aligned}$$

Hence the proof

3 INFINITE SECOND ORDER q-FIBONACCI SUMMATION FORMULA

The sum of infinite second order q-Fibonacci summation and closed from solution of the second order q-difference equation.

Definition 3.1 Fibonacci Sequence for each $\beta = (\beta_1, \beta_2) \in R^2$ the second order Fibonacci sequence is defined as

$$F_\beta = \{F_\beta, m\}_{m=0}^\infty$$

where $F_\beta, 0 = 1, F_\beta, 1 = \beta_1$, and $F_\beta, m = \beta_1 F_\beta, m-1 + \beta_2 F_\beta, m-2$ for $m \geq 2$ when $\beta_1 = \beta_2 = 1$ the generalized Fibonacci sequence.

Theorem 3.2 Let $q, \beta \neq 0, u(e^x)$ be a real valued function defined on $(-\infty, \infty)$ and if,

$$\lim_{r \rightarrow \infty} \frac{1}{(-\beta_2)^{r+1}} \left\{ F_{\beta, r+1} \Delta_{q, \beta}^{-1} u(q^{r+1} e^x) - F_{\beta, r} \Delta_{q, \beta}^{-1} u(q^{r+2} e^x) \right\} = 0$$

$$\Delta_{q, \beta}^{-1} u(e^x) = \frac{-1}{\beta_2} \sum_{r=0}^\infty \frac{(-1)^r F_{\beta, r}}{\beta_2^r} u(q^r e^x) \quad (5)$$

is an infinite Fibonacci series solution of the second order q-difference equation for $t = 1$

Proof. Taking $\Delta_{q, \beta}^{-1} u(e^x) = v(e^x)$.

$$v(e^x) = \frac{1}{\beta_2} v(q^2 e^x) - \frac{\beta_1}{\beta_2} v(q e^x) - \frac{-1}{\beta_2} u(e^x) \quad (6)$$

Replacing e^x by $q e^x$ in eqn (6) we get ,

$$v(q e^x) = \frac{1}{\beta_2} v(q^3 e^x) - \frac{\beta_1}{\beta_2} v(q^2 e^x) - \frac{-1}{\beta_2} u(q e^x)$$

Therefore eqn (6) becomes,

$$v(e^x) = \frac{-1}{\beta_2} u(e^x) + \frac{\beta_1}{\beta_2} u(q e^x) + \frac{\beta_1^2 + \beta_2}{\beta_2^2} v(q^2 e^x) - \frac{\beta_1}{\beta_2} v(q^3 e^x) \quad (7)$$

Again replacing e^x by $q^2 e^x$ in eqn (7), we get.

$$v(e^x) = \frac{-1}{\beta_2} \left\{ u(e^x) - \frac{\beta_1}{\beta_2} u(q e^x) + \frac{\beta_1^2 + \beta_2}{\beta_2^2} u(q^2 e^x) - \frac{\beta_1^2 + \beta_2}{\beta_2^2} v(q^4 e^x) \right. \\ \left. + \beta_1(\beta_1^2 + \beta_2) + \frac{\beta_1 \beta_2}{\beta_2^2} v(q^3 e^x) \right\}$$

Since $F_n \in F_\beta$, we have,

$$v(e^x) = \frac{-1}{\beta_2} \left\{ F_0 u(e^x) + \frac{F_1}{\beta_2} u(q e^x) + \frac{F_2}{\beta_2} u(q^2 e^x) + \frac{F_2}{\beta_2^2} v(q^4 e^x) + \frac{F_3}{\beta_2^4 e^x} + \frac{F_3}{\beta_2^2} v(q^3 e^x) \right\} \quad (8)$$

Now again replacing e^x by $q^3 e^x$ in eqn (8)

In general form of real valued function

$$\Delta_{q, \beta}^{-1} u(e^x) = \frac{-1}{\beta_2} \sum_{r=0}^\infty \frac{(-1)^r F_{\beta, r}}{\beta_2^r} u(q^r e^x)$$

Hence the Proof

Corollary 3.3 Let $e^x \in (0, \infty)$ and $q, \beta \neq 0$ If

$$\lim_{r \rightarrow \infty} \frac{1}{(-\beta_2)^{r+1}} \left\{ F_{\beta, r+1} \Delta_{q, \beta}^{-1} \frac{1}{(q^{r+1} e^x)^2} - F_{\beta, r} \Delta_{q, \beta}^{-1} \frac{1}{(q^{r+2} e^x)^2} \right\}$$

Then we have,

$$\frac{-1}{\beta_2} \sum_{r=0}^\infty \frac{(-1)^r F_{\beta, r}}{\beta_2^r} \frac{1}{(q^r e^x)^2} = \frac{q^4}{(1 - q^2 \beta_1 - q^4 \beta_2) e^{x^2}} \quad (9)$$

Proof. Let $u(e^x) = \frac{1}{e^{k^2}}$

$$\Delta_q^{-1} u(e^x) = \frac{-1}{\beta_2} \sum_{r=0}^{\infty} \frac{(-1)^r F_{\beta,r}}{\beta_2^r} u(q^r e^x)$$

$$\Delta_q^{-1} u(e^x) = \frac{-1}{\beta_2} \sum_{r=0}^{\infty} \frac{(-1)^r F_{\beta,r}}{\beta_2^r} \left(\frac{1}{e^{x^2}} \right)$$

$$\frac{-1}{\beta_2} \sum_{r=0}^{\infty} \frac{(-1)^r F_{\beta,r}}{\beta_2^r} = \Delta_q^{-1} \left(\frac{1}{e^{x^2}} \right) \quad (10)$$

Now,

$$\Delta_q \left(\frac{1}{e^{x^2}} \right) = \frac{1}{(q^2 e^x)^2} - \frac{\beta_1}{(q e^x)^2} - \frac{\beta_2}{e^{x^2}}$$

$$\Delta_q \left(\frac{1}{e^{x^2}} \right) = \frac{1}{q^4 e^{x^2}} - \frac{\beta_1}{q^2 e^{x^2}} - \frac{\beta_2}{(e^x)^2}$$

$$\Delta_q^{-1} \left(\frac{1}{e^{x^2}} \right) = \frac{q^4}{(1 - q^2 \beta_1 - q^4 \beta_2) e^{x^2}} \quad (11)$$

Hence, the equation by substituting eqn (10) and (11)

$$\begin{aligned} \frac{-1}{\beta_2} \sum_{r=0}^{\infty} \frac{(-1)^r F_{\beta,r}}{\beta_2^r} \frac{1}{(q^r e^x)^2} &= \Delta_q^{-1} \left(\frac{1}{e^{x^2}} \right) \\ \frac{-1}{\beta_2} \sum_{r=0}^{\infty} \frac{(-1)^r F_{\beta,r}}{\beta_2^r} \frac{1}{(q^r e^x)^2} &= \frac{q^4}{(1 - q^2 \beta_1 - q^4 \beta_2) e^{x^2}} \end{aligned}$$

Hence the proof

Example 3.4 Taking $x = 2, \beta_1 = 1, \beta_2 = 2$ and $q = 3$

$$\begin{aligned} \frac{-1}{\beta_2} \sum_{r=0}^{\infty} \frac{(-1)^r F_{\beta,r}}{\beta_2^r} \frac{1}{(q^r e^x)^2} &= \frac{q^4}{(1 - q^2 \beta_1 - q^4 \beta_2) e^{x^2}} \\ \frac{-1}{2} \sum_{r=0}^{\infty} \frac{(-1)^r F_{\beta,r}}{2^r} \frac{1}{(3^r 2)^2} &= \frac{3^4}{(1 - 3^2 * 1 - 3^4 * 2) e^{2^2}} \\ &= -26.01052941 \end{aligned}$$

4 INFINITE SECOND ORDER q-FIBONACCI MULTI SERIES FORMULA

We obtain formula for sum of q-Fibonacci multi series.

Theorem 4.1 $\lim_{r_i \rightarrow \alpha} \frac{1}{(-\beta_2)_{i+1}^{r_i+1}} \left\{ F_{\beta, r_i+1} \Delta_q^{-1} u(q^{r_i+1} x) - F_{\beta, r_i} \Delta_q^{-1} u(q_i^{r_i+2} x) \right\} = 0$

for $i = 1, 2, \dots, t$, then we have.

$$\sum_{(r)_{1 \rightarrow t}}^{\infty} \sum_{(r)_{1 \rightarrow t}} \prod_{p=1}^t \frac{F_{\beta, r_p}}{(\beta)^{r_p}} u \left(\prod_{p=1}^t q_p^{r_p} e^x \right) = (-\beta_2)^t \Delta_q^{-1} u(e^x) \quad (12)$$

is a solution of the equation.

Proof. Replacing q, r by q_2, r_2 in

$$\Delta_q^{-1} u(e^x) = \frac{-1}{\beta_2} \sum_{r=0}^{\infty} \frac{(-1)^r F_{\beta,r}}{\beta_2^r} u(q_1^r e^x)$$

$$\Delta_q^{-1} u(e^x) = \frac{-1}{\beta_2} \sum_{r_2=0}^{\infty} \frac{(-1)_2^{r_2} F_{\beta, r_2}}{\beta_2^{r_2}} u(q_1^{r_2} e^x)$$

$$F_0 u(e^x) - \frac{F_1}{\beta_2} u(q_2 e^x) + \frac{F_2}{(\beta_2^2)} u(q_2^2 e^x) \dots \dots + \infty = -(\beta_2) \Delta_q^{-1} u(e^x) \quad (13)$$

Replacing e^x by $q_1^{r_1} e^x$ and dividing by $\frac{\beta_2^{r_1}}{(-1)^{r_1} F_{r_1}}$ for $r_1 = 1, 2, 3 \dots \dots \infty$ in eqn (13)

$$\begin{aligned} \frac{(-1)^{r_1} F_{r_1}}{\beta_2^{r_1}} \left\{ F_0^u(q_1^{r_1} e^x) - \frac{F_1}{\beta_2} u(q_1^{r_1} q_2 e^x) + \frac{F_2}{\beta_2^2} u(q_1^{r_1} q_2^2 e^x) - \frac{F_3}{\beta_2^3} u(q_1^{r_1} q_3^3 e^x) + \dots + \infty \right\} \\ = \frac{(-\beta_2)(-1)^{r_1} F_{r_1}}{\beta_2^{r_1}} \Delta_q^{-1} u(q_1^{r_1} e^x) \end{aligned}$$

for $r_1 = 1, 2, 3 \dots \dots \infty$,

summing the above equation with (13) we arrive,

$$\sum_{r_1=0}^{\infty} \sum_{r_2=0}^{\infty} \frac{(-1)^{r_1+r_2} F_{r_1} F_{r_2} u(q_1^{r_1} q_2^{r_2} e^x)}{\beta_2^{r_1} \beta_2^{r_2} (-\beta_2)} = \sum_{r_1=0}^{\infty} \frac{(-1)^{r_1} F_{r_1}}{\beta_2^{r_1}} - \Delta_q^{-1} u(q_1^{r_1} e^x) \quad (14)$$

Applying eqn (5) in eqn (14) we obtain,

$$\sum_{r_1=0}^{\infty} \sum_{r_2=0}^{\infty} \frac{(-1)^{r_1} (-1)^{r_2} F_{r_1} F_{r_2} u(q_1^{r_1} q_2^{r_2} e^x)}{\beta_2^{r_1} \beta_2^{r_2}} = (-\beta_2)^2 \Delta_{q_1}^{-1} \Delta_{q_2}^{-1} u(e^x) \quad (15)$$

Replacing $q_1, q_2, F_1, F_2, r_1, r_2$ by $q_2, q_3, F_2, F_3, r_2, r_3$ in eqn (15) we get,

$$\sum_{r_2=0}^{\infty} \sum_{r_3=0}^{\infty} \frac{(-1)^{r_2} (-1)^{r_3} F_{r_2} F_{r_3} u(q_2^{r_2} q_3^{r_3} e^x)}{\beta_2^{r_2} \beta_2^{r_3}} = (-\beta_2)^2 \Delta_{q_2}^{-1} \Delta_{q_3}^{-1} u(e^x) \quad (16)$$

Replacing e^x by $q_1^{r_1} e^x$ and dividing by $\frac{\beta_2^{r_1}}{(-1)^{r_1} F_{r_1}}$ for $r_1 = 1, 2, 3 \dots \dots \infty$ in eqn (16)

$$\begin{aligned} \frac{(-1)^{r_1} F_{r_1}}{\beta_2^{r_1}} \sum_{r_2=0}^{\infty} \sum_{r_3=0}^{\infty} \frac{(-1)^{r_2} (-1)^{r_3} F_{r_2} F_{r_3} u(q_1^{r_1} q_2^{r_2} q_3^{r_3} e^x)}{\beta_2^{r_2} \beta_2^{r_3}} \\ = \frac{(-1)^{r_1} F_{r_1}}{\beta_2^{r_1}} (-\beta_2)^2 \Delta_{q_2}^{-1} \Delta_{q_3}^{-1} u(q_1^{r_1} e^x) \end{aligned} \quad (17)$$

Summing eqn (17) with eqn (16) gives,

$$\begin{aligned} \sum_{r_1=0}^{\infty} \sum_{r_2=0}^{\infty} \sum_{r_3=0}^{\infty} \frac{(-1)^{r_1} (-1)^{r_2} (-1)^{r_3} F_{r_1} F_{r_2} F_{r_3} u(q_1^{r_1} q_2^{r_2} q_3^{r_3} e^x)}{\beta_2^{r_1} \beta_2^{r_2} \beta_2^{r_3}} \\ = (-\beta_2)^2 \sum_{r_1=0}^{\infty} \frac{(-1)^{r_1} F_{r_1}}{\beta_2^{r_1}} \Delta_{q_2}^{-1} \Delta_{q_3}^{-1} u(q_1^{r_1} e^x) \end{aligned} \quad (18)$$

Applying eqn (6) with eqn (18)

$$\begin{aligned} \sum_{r_1=0}^{\infty} \sum_{r_2=0}^{\infty} \sum_{r_3=0}^{\infty} \frac{(-1)^{r_1} (-1)^{r_2} (-1)^{r_3} F_{r_1} F_{r_2} F_{r_3} u(q_1^{r_1} q_2^{r_2} q_3^{r_3} e^x)}{\beta_2^{r_1} \beta_2^{r_2} \beta_2^{r_3}} \\ = (-\beta_2)^3 \Delta_{q_1}^{-1} \Delta_{q_2}^{-1} \Delta_{q_3}^{-1} u(e^x) \end{aligned}$$

Hence the Proof

CONCLUSION:

The multi series solutions of Infinite second order q-Fibonacci summation formula have been obtained moreover Infinite second order q-Fibonacci Multi series formula also derived.

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GREEN MARKETING: AN ANALYSIS ON CONSUMER BEHAVIOUR TOWARDS GREEN PRODUCTS

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ABSTRACT

Green marketing is the marketing of products that are considered environmentally friendly. Every year the number of people turning to green products or products that protect the environment is increasing and thus exacerbating the situation. The need for sustainable business practices by companies around the world seems to be the result of increased consumer awareness of the lack of environmental protection. So businesses in almost every industry nowadays showcase the green features of the products and services of every opportunity they get. The success of any green marketing strategy is highly dependent on targeted consumers. Here an attempt is made to study consumer behaviour towards green products.

Keywords: Green marketing, Green products, Eco friendly products, consumer behaviour

INTRODUCTION

Green marketing started in 1980 when the concept of green marketing came about as a result of the shift in consumer attention to green products. At that time, green marketing research focused on changing consumer consumption of green products. A study was conducted to identify consumer interest in the use and purchase of green products. Due to the increase in consumer awareness level a positive change in environmental products has been reflected in consumer behavior. A green consumer can be seen as a person who avoids any product that could cause damage to any living thing, cause environmental degradation during use, consume large amounts of non-renewable energy, and involve illegal testing in animals or human studies. The growing demand is felt to switch to green products and services by the company and consumers. Whether switching to green advertising will cost both companies and consumers will benefit both over time. The main idea of green marketing is to make people aware of environmental issues and how consumers can help the environment when switching to green products.

STATEMENT OF THE PROBLEM

In recent years, we have experienced more pollution, climate change, the effects of greenhouse gases due to carbon emissions and limited natural resources. So consumers are more aware about environmental protection. As a result, consumers are becoming more and more difficult to choose a product because they have begun to focus more on environmental safety and healthy living. So the manufacturer began to provide green products to meet consumers' needs and requirements. The purpose of this study is to identify consumer purchasing intentions for green products and to analyze how factors affect consumer behavior and behavior.

OBJECTIVES OF THE STUDY

- 1.To know the awareness of people towards green products .
- 2.To examine the factors that influence consumers buying behaviour for green products .
- 3.To analyse the level of satisfaction and buying motives of consumers towards green products

RESEARCH METHODOLOGY**SOURCES OF DATA**

There are two sources for which data is collected. Primary data is collected primarily by a systematic questionnaire. The questions are structured in such a way that the respondents have no difficulty in answering them. The second data is obtained through websites, books, online magazines and journals.

SAMPLE SIZE

The sample used for the questionnaire is seventy five persons.

SAMPLING TECHNIQUE

Convenience sampling technique was used for sampling.

SAMPLING AREA : Thrissur District

TOOLS USED FOR ANALYSIS

The collected data was analysed with statistical tools like Ranking, Weighted arithmetic mean and percentage analysis.

LIMITATIONS OF THE STUDY

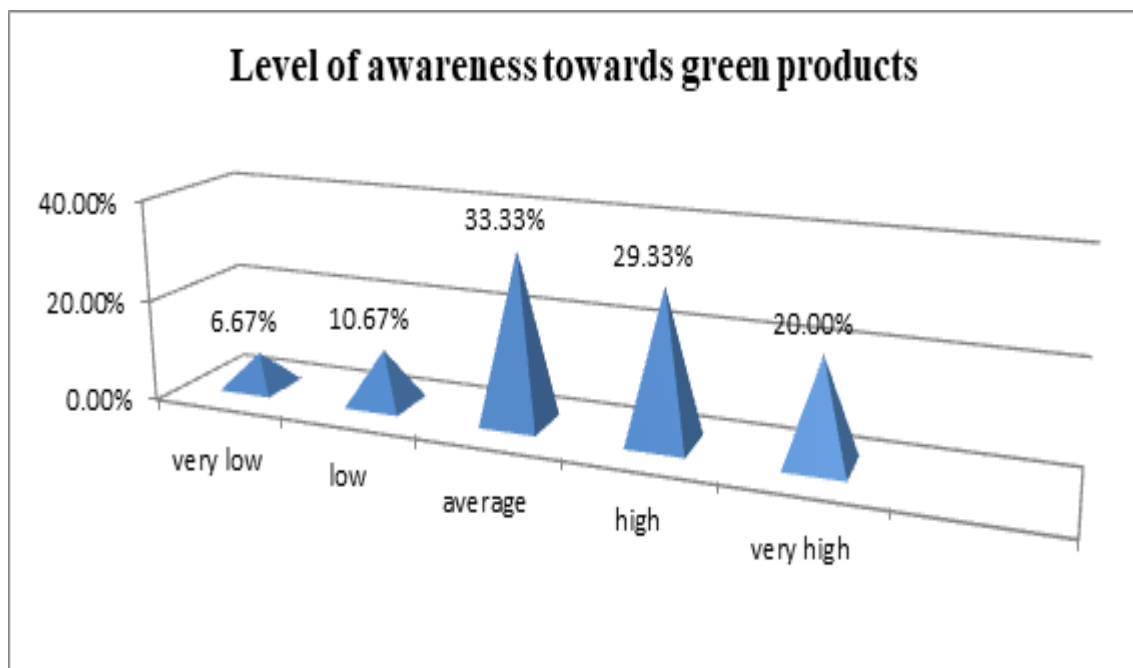
- 1) The study restricted to Irinjalakuda municipality only and the result may not be applicable to other places.
- 2) The result obtained is based on the respondents opinion so there is a chance of consumer bias.

REVIEW OF LITERATURE

- 1) Ottman (1992), in his analysis of "Green marketing: the opportunity to innovate" states that consumers buy raw materials because they are environmentally friendly but these products should be readily available, should be of good quality and affordable price.
- 2) Roberts (1996) "Different ways to differentiate the environment: A look at green consumer behavior in the new millennium" explains that environmentally conscious customers prefer to buy raw products because these products enhance environmental activities and reduce the negative effects of other pollutants.
- 3) Soonthorsmai (2007) in their study "Environmental and green marketing as a global competitive edge" noted that people who are more concerned with environmental issues are, in general, more likely to buy raw products and this trend is becoming stronger over time.
- 4) Chris (2008) "Research on health concerns in the use of raw foods" showed that today, consumers are more aware of health and their priorities regarding consumption depend on green products that allow the environment as well.
- 5) Meng (2011) "Intensive research on the potential of green hotel products in penang" has explored the potential niche market in Penang and the attitudes and perceptions of consumers about the eco-friendly tourism industry. This study was based on both primary and secondary data. Research has shown that green hotel products have a potential market for home buyers. Most respondents considered themselves moderate (they would like green sometimes) green consumers and it was found that the level of green awareness has a positive relationship with the consumer education background.
- 6) Polonsky (2011) "Green Market Introduction Research" states that activities related to the production, use and use of resources with minimal side effects promote green marketing and produce good external products.

DATA ANALYSIS AND INTERPRETATION

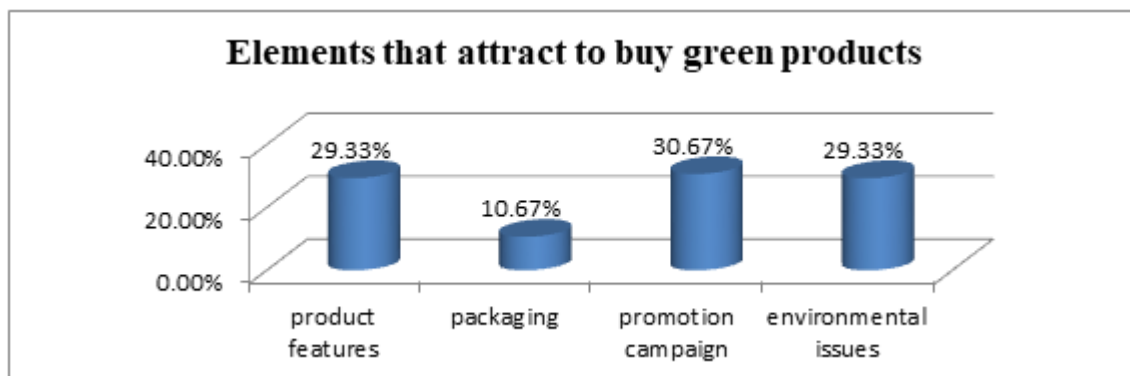
Figure 1 Level of awareness towards green products



From the above figure, it can be understood that 29.33% of respondents are highly aware of the concept of green products. It is found that 6.67% of respondents are not aware of the green products, 10.67% of

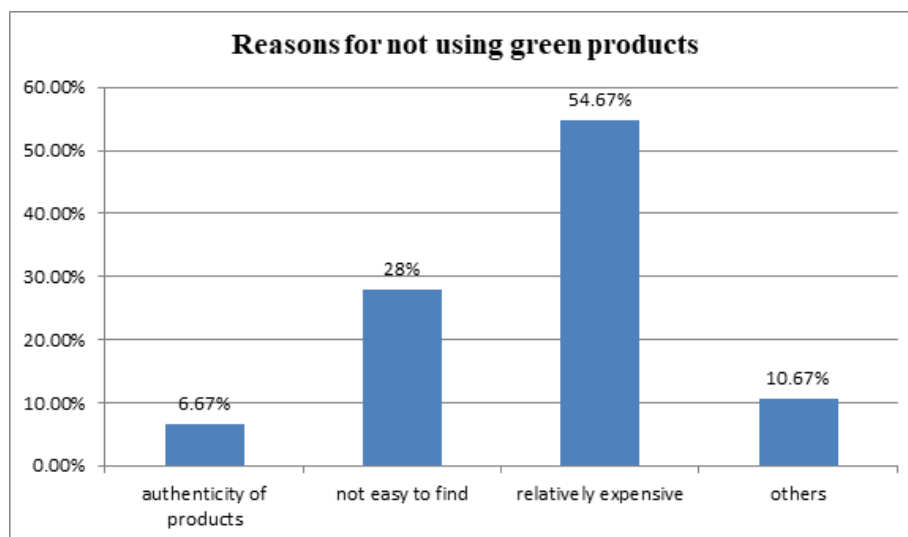
respondents have awareness to small degree , 33.33% of respondents have awareness of average level ,20% of respondents have awareness of fully level .

Figure 2 Elements that attract to buy green products



From the above figure,30.67% are attracted to the promotion campaign . 23.33% of respondents are attracted to the products features and another 29.33% of respondents give importance to environmental issues . 10.67% of respondents buy green products based on packaging .

Figure 3 Reasons for not using green products



From the above figure,54.67% of respondents think that expensive is the main reason for not buying green products . And 28% of respondents think that green products are very hard to find in the area . 6.67% of respondents are afraid of the authenticity of products .

Table 1 Source of awareness about eco friendly product

| Sources | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7 | |
|--------------------|----|-----|----|-----|----|----|----|-----|----|----|----|----|----|----|
| | No | W | No | W | No | W | No | W | No | W | No | W | No | W |
| T.V | 5 | 35 | 7 | 42 | 3 | 15 | 25 | 100 | 12 | 36 | 17 | 34 | 6 | 6 |
| Magazine | 8 | 56 | 10 | 60 | 18 | 90 | 13 | 52 | 22 | 66 | 2 | 4 | 2 | 2 |
| Internet Ads | 32 | 224 | 28 | 168 | 3 | 15 | 4 | 16 | 1 | 3 | 6 | 12 | 1 | 1 |
| Friends& Relatives | 20 | 140 | 17 | 102 | 14 | 70 | 9 | 36 | 2 | 6 | 7 | 14 | 6 | 6 |
| News paper | 5 | 35 | 7 | 42 | 18 | 90 | 7 | 28 | 25 | 75 | 2 | 4 | 11 | 11 |
| Seminar | 1 | 7 | 2 | 12 | 12 | 60 | 10 | 40 | 9 | 27 | 16 | 32 | 25 | 25 |
| Super market staff | 4 | 28 | 4 | 24 | 7 | 35 | 7 | 28 | 4 | 12 | 25 | 50 | 24 | 24 |

| sources | Total score | Mean score | Rank |
|---------|-------------|------------|------|
| T.V | 268 | 3.57 | 5 |

| | | | |
|---------------------|-----|------|---|
| Magazine | 330 | 4.4 | 3 |
| Internet | 439 | 5.85 | 1 |
| Friends & Relatives | 374 | 4.99 | 2 |
| News paper | 285 | 3.8 | 4 |
| Seminar | 203 | 2.71 | 6 |
| Super markets | 201 | 2.68 | 7 |

From the above table it is clear that internet is the main source of information regarding eco friendly products, followed by friends & relatives, magazine, news paper, T.V, seminar and supermarkets.

Table 2 Motives of purchasing green products

| Motives | 1 | | 2 | | 3 | | 4 | |
|--------------------------------|----|--------|----|--------|----|--------|----|--------|
| | No | weight | No | Weight | No | Weight | No | Weight |
| Concern for health | 32 | 128 | 20 | 60 | 19 | 38 | 4 | 4 |
| Concern for status | 8 | 32 | 11 | 33 | 15 | 30 | 41 | 41 |
| Concern for environment | 13 | 52 | 15 | 45 | 22 | 44 | 25 | 25 |
| To use better quality products | 22 | 88 | 29 | 87 | 19 | 38 | 5 | 5 |

| Motives | Total score | Mean score | Rank |
|--------------------------------|-------------|------------|------|
| Concern for health | 230 | 3.07 | 1 |
| Concern for status | 136 | 1.81 | 4 |
| Concern for environment | 166 | 2.21 | 3 |
| To use better quality products | 218 | 2.91 | 2 |

From the above table it is clear that the main motive of buying green products is due to the concern on health. Then they give importance to quality products, environment and status respectively.

Table 3 Point of purchase of green products

| Particulars | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | |
|------------------|----|--------|----|--------|----|--------|----|--------|----|--------|----|--------|
| | No | weight | No | weight | No | Weight | No | weight | No | Weight | No | Weight |
| Retail malls | 23 | 138 | 28 | 140 | 7 | 28 | 4 | 12 | 7 | 14 | 6 | 6 |
| Local shop | 32 | 192 | 14 | 70 | 4 | 16 | 6 | 18 | 10 | 20 | 9 | 9 |
| Online | 2 | 12 | 10 | 50 | 18 | 72 | 24 | 72 | 8 | 16 | 13 | 13 |
| Teleshopping | 3 | 18 | 6 | 30 | 12 | 48 | 14 | 42 | 9 | 18 | 31 | 31 |
| Specialised shop | 9 | 54 | 9 | 45 | 22 | 88 | 14 | 42 | 14 | 28 | 7 | 7 |
| Factory outlet | 6 | 36 | 8 | 40 | 12 | 48 | 13 | 39 | 27 | 54 | 9 | 9 |

| Motives | Total score | Mean score | Rank |
|------------------|-------------|------------|------|
| Retail malls | 338 | 4.51 | 1 |
| Local shop | 325 | 4.33 | 2 |
| Online | 235 | 3.13 | 4 |
| Teleshopping | 187 | 2.49 | 6 |
| Specialised shop | 264 | 3.52 | 3 |
| Factory outlet | 226 | 3.01 | 5 |

From the above table it is clear that the respondents depend more upon retail mall to get the green products, followed by local shop, specialised shop, online, factory outlet, and teleshopping.

FINDINGS

- Out of 75 respondents only 29.33% are highly aware of the concept of green products. 6.67% of respondents are not aware of the products. 10.67% of respondents have awareness to small degree, 33.33% of respondents have awareness of average level, 20% have awareness at fully level.
- 30.67% are attracted to the promotion campaign. 23.33% of respondents are attracted to the products features and another 29.33% of respondents give importance to environmental issues. 10.67% of respondents buy green products based on packaging.

- 54.67% of respondents think that expensive is the main reason for not buying green products. And 28% of respondents think that green products are very hard to find in the area. 6.67% of respondents are afraid of the authenticity of products.
- Internet is the main source of information regarding eco friendly products. It is followed by friends & relatives, magazine, news paper, T.V, seminar and supermarkets.
- Consumers are more concern about health and this is the main motive of buying green products. Then they give importance to quality, environment and status respectively.
- This study reveals that the respondents depends more upon retail mall to get the green products, followed by local shop, specialised shop, online, factory outlet, and teleshoping.

SUGGESTIONS

- To increase environmental marketing awareness, government should take additional initiatives such as rural awareness programs through conferences, conferences and workshops, etc.
- Businesses should focus on developing a green product that is in demand from the general public.
- Businesses should also introduce efforts in a manner that minimizes risk-related risks
- Companies should embark on a systematic and cohesive campaign to promote awareness of green marketing among customers, keeping factors such as age, region, and income among others in perspective.
- Manufacturers should develop their products and services according to the real needs of the customers because producing raw products and services is not enough to be in line with the real needs of the customers.
- Research and development costs should be increased as they will bring new and better ways of producing, communicating and delivering green products and services.
- Government must promote a green idea of products and services and ultimately move towards a more sustainable economy.
- The government should support environmental efforts, so that the retailer can access green products and services at reasonable prices.
- Organizations need to align green policies as a long-term strategy because many environmental initiatives have been costly but over time beneficial and less expensive for organizations.

CONCLUSION

There is a need for change in business ethics and attitude towards the provision of environmentally friendly products. In this study consumers expressed deep concern about the concept of green marketing and green companies. In addition, consumers are well aware of the fact that corporate productivity can be greatly improved with a green transformation. Green marketing is a tool for the next generation of environmental protection. It requires a lot of work and effort in the public sector and industry in order to properly plan and implement environmental marketing. Based on the findings and discussions, it is clear that the consumer these days knows more about green marketing. People in emerging economic sectors like India are also very concerned about the green environment and have a positive attitude towards green marketing.

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GLOBAL STATISTICAL DATA: ACCEPTANCE ON HOMOSEXUALITY

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ABSTRACT

In a country like India who frowns at the gay and lesbian community, transgender, hijras and transsexuals, now it's time for the society to sensitize on the issues of transgender. Homosexuality is generally considered as a taboo subject by both Indian civil society and the government.. Homosexuals are disrespected by the society. Many people considered them as abnormal people and not under the purview of human being. Now is the time to accept homosexuals as normal human being and include them in the mainstream.

The nation, particularly in urban areas, is witnessing a paradigm and positive shift in the traditional attitudes towards homosexuality in the country today. Contemporary Indian society, specially the youth, believe that, being homosexual is the same as being left-handed and no less normal. It is a gigantic moment of change from invisibility to visibility in the context of queer citizenship in India. Now we are witnessing the change in the perception of people. Be it the media, cinema or the judiciary, each segment of the society is raising a voice on its own.

Keywords;- Homosexual, Human being, perception

Today India is in an era, dominated by technology, media, culture amalgamation and mobility, the nation, particularly in urban areas, is witnessing a paradigm and positive shift in the traditional attitudes towards homosexuality in the country today. Contemporary Indian society, specially the youth, believe that, being homosexual is the same as being left-handed and no less normal. It is a gigantic moment of change from invisibility to visibility in the context of queer citizenship in India. But some significant examples has shown how it is a changing the perception of people. Be it the media, cinema or the judiciary, each segment of the society is raising a voice on its own.

Vikram Phukan, ex-editor, Bombay Dost, India's first gay magazine, says that the role of the social media cannot be undermined in bringing about this change in perception. "Penetration of information is probably the most important reason why such a change is visible unlike 10 years ago. The social media has further helped in bringing about the much-needed perception change in an orthodox and traditional Indian society of ours. But only a vociferous minority is out whereas a majority is still closeted. Gays might have been legally accepted but socially they are still handicapped. That said, even though we have miles to go, this is definitely a welcome start,"

Growing social acceptance of homosexuality in India is also quite evident in the recent film, and festival and releases of gay-themed films. He also says "Life does not let you choose your parents or your sexuality," was the tagline of Amen, awarded best short film at the recently concluded Kashish International Queer Film Festival in Mumbai. My Brother Nikhil has, in fact, done to Bollywood what Philadelphia did for Hollywood in 1993 where the lead HIV- positive character played by Tom Hanks generated understanding of the gay community's place in society. Onir, Indian filmmaker and gay rights supporter says that "The awareness in youth aged between 15-23 years is slowly increasing no doubt. But with increasing dialogues I have also witnessed increasing discomfort in the youth of today. It is more of tolerance than acceptance in the true sense of the term. A lot more representation is needed in terms of cinema or the social media which can provide the much-needed platform for interaction between people who are still in the closet. I would call for the youth of today to participate a little more and show some more respect to the homosexual community. The mindset of people will definitely change, but it will take some time," Times are changing and in a positive way. Harish Iyer, advisor, MINGLE (Mission for Indian Gay and Lesbian Empowerment), a nationwide advocacy group that pushes for LGBT equality in all spheres of public life in India. He says "I feel India is on the brink of a perception make-over. We are now a nation with the courage to accept sexuality in its varied forms, color and vigor. I have been visiting colleges and interacting with students. From the 'eyes pop out in shock' moments, they are progressing to a chest-thumping 'you know I have a gay friend - how cool!' attitude. Fag is almost like the new fad. It would be relieving to be a non-issue for a change,"

Today many countries have accepted homosexuality while some countries like United States and many more are grapple with the issue of **same-sex marriage**. A new **Pew Research Center** survey finds huge variance by region on the broader question of whether homosexuality should be accepted or rejected by society. The survey of publics conducted in 39 countries finds a broader acceptance of homosexuality in North America, the

European Union, and much of Latin America, but equally rejection in predominantly Muslim nations and in Africa, as well as in some parts of Asia and in Russia. Opinion about the **acceptability of homosexuality** is divided in Israel, Poland and Bolivia.

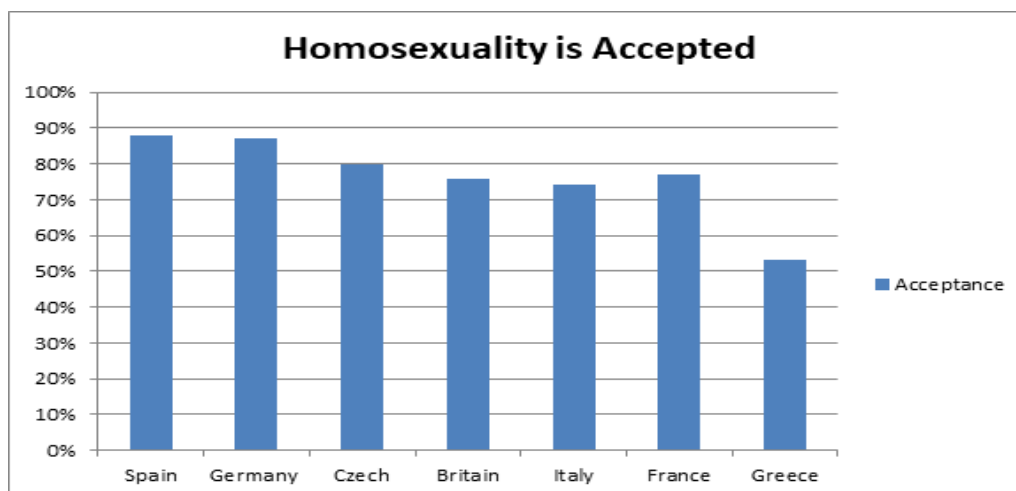
Acceptance or attitude of homosexuality is dependent on various factor

1. Religion
2. Age
3. Gender : men and womenA
4. Young, middle age and old

Attitudes about homosexuality have been fairly stable in recent years, except in South Korea, the United States and Canada, where the percentage saying homosexuality should be accepted by society has grown by at least ten percentage points since 2007. These are among the key findings of a new survey by the **Pew Research Center** conducted in 39 countries among 37,653 respondents from March 2 to May 1, 2013. The survey also finds that acceptance of homosexuality is particularly seen in countries where religion is not the central point in people's lives. If richest countries in the world are contrasted with poorer countries with high levels of religiosity, few believe homosexuality should be accepted by society.

Age is also a factor in several countries, with younger respondents offering far more tolerant views than older ones. And while gender differences are not prevalent, in those countries where they are, women are consistently more accepting of homosexuality than men.

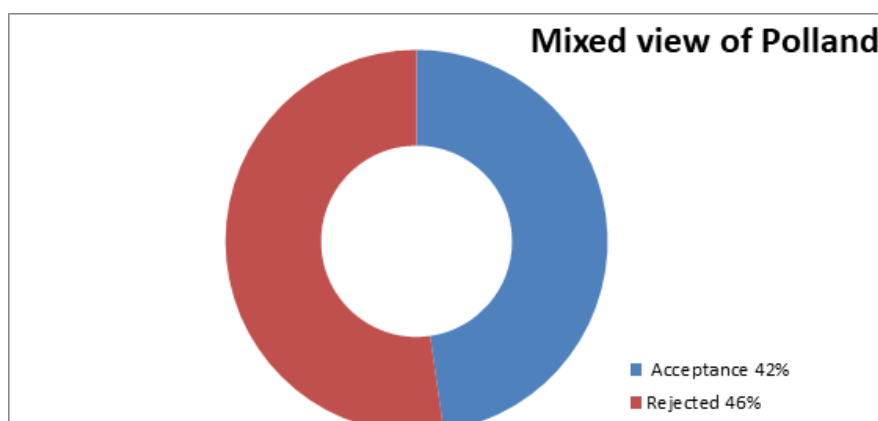
Figure 5.1 Countries where Homosexuality Is Most Accepted.



Survey by the Pew Research Center

Explanation: From the above chart we view that homosexuality is accepted by society is in most of the European Union countries surveyed in 2013. About three-quarters or more in Spain acceptance is seen in the country of Spain, while lowest acceptance is seen in the country Greece.

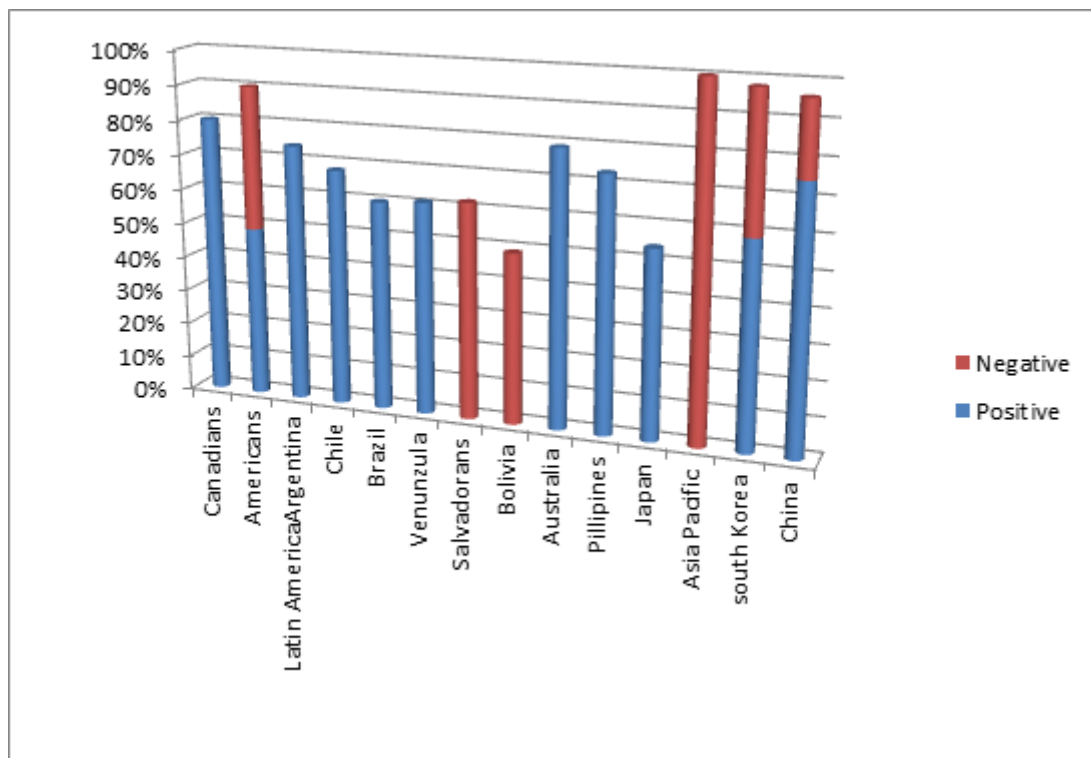
Figure 5.2 Mixed view of Poll and



Explanation:

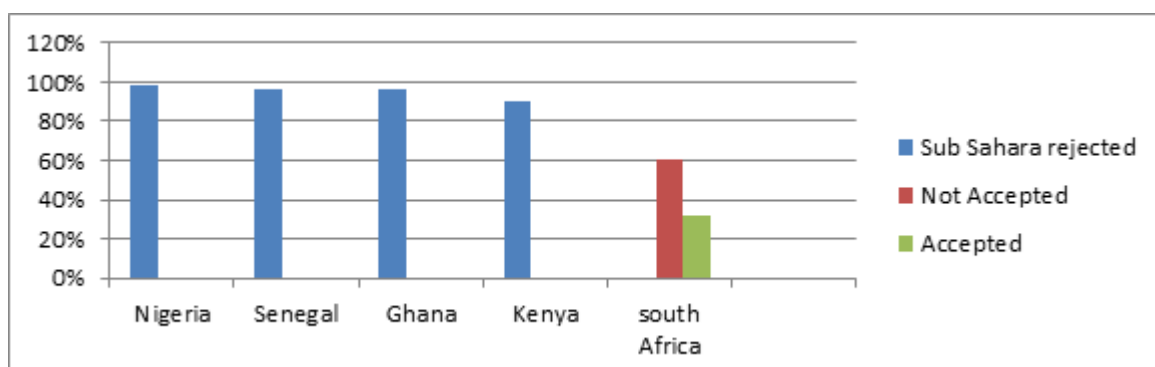
Above Diagramed shows that Poland is the only EU country surveyed where views are mixed. 42% say homosexuality should be accepted by society and 46% believe it should be rejected.

Figure 5.3 Positive and Negative views on Homosexuality

**Explanation:**

Above figure shows the data about the countries that have positive and negative views about homosexuality. Canadians who had an intolerant view about homosexuality is now more positive towards homosexuality, it has been accepted by 80%. Views were not positive before only 60% smaller majority believed homosexuality should be accepted. But Americans are far more tolerant today than they were before. Now we find 49% of the people believe that homosexuality should be accepted by society and 41% said it should be rejected. Opinions about homosexuality are also positive in parts of Latin America. Argentina, is the first country to legalize gay marriage in 2010, but (74%) say homosexuality should be accepted, so also 68% Chile, 61% Mexico and 60% Brazil and 51% Venezuelans also express acceptance. While others have a negative or say contrast view on homosexuality, where 62% of Salvadorans say homosexuality should be rejected by society, as do nearly half in Bolivia i.e. 49%. In the Asia Pacific region, also views of homosexuality are mostly negative, more than seven-in-ten in Australia (79%) and the Philippines (73%) say homosexuality should be accepted by society; 54% in Japan agree. Elsewhere, majorities in South Korea (59%) and China (57%) also say homosexuality should not be accepted by society; 39% and 21%, respectively, say it should be accepted. South Korean views, while still negative, have shifted considerably since 2007, when 77% said homosexuality should be rejected and 18% said it should be accepted by society.

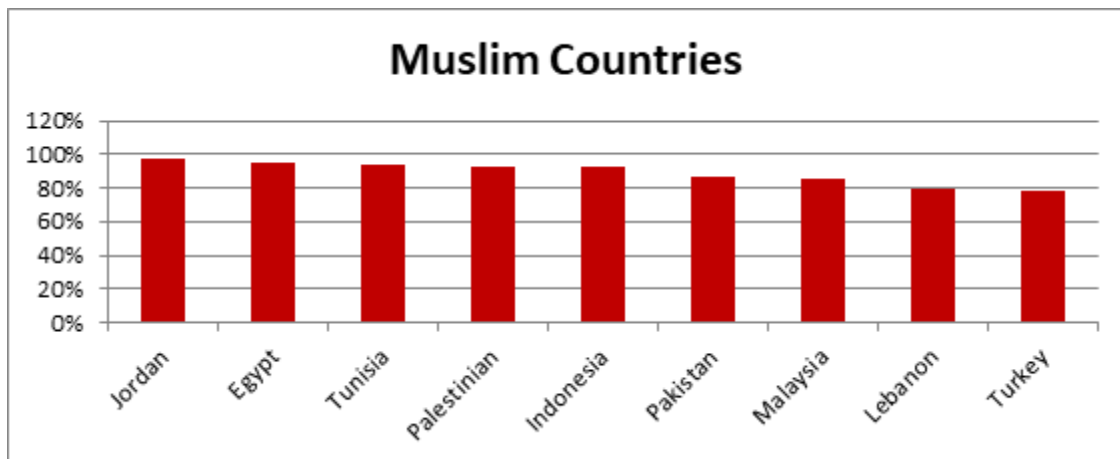
Figure 5.5 Where Homosexuality Is Rejected



Explanation:

Above chart shows the acceptability of Africa and Muslim countries towards Homosexuality. In sub-Saharan Africa, at least nine-in-ten in Nigeria (98%), Senegal (96%), Ghana (96%), Uganda (96%) and Kenya (90%) believe homosexuality should not be accepted by society. while in South Africa where, unlike in many other African countries, homosexual acts are legal and discrimination based on sexual orientation is unconstitutional, 61% say homosexuality should not be accepted by society, while just 32% say it should be accepted.

Figure 5.5 Muslim countries which view Homosexuality should not be accepted

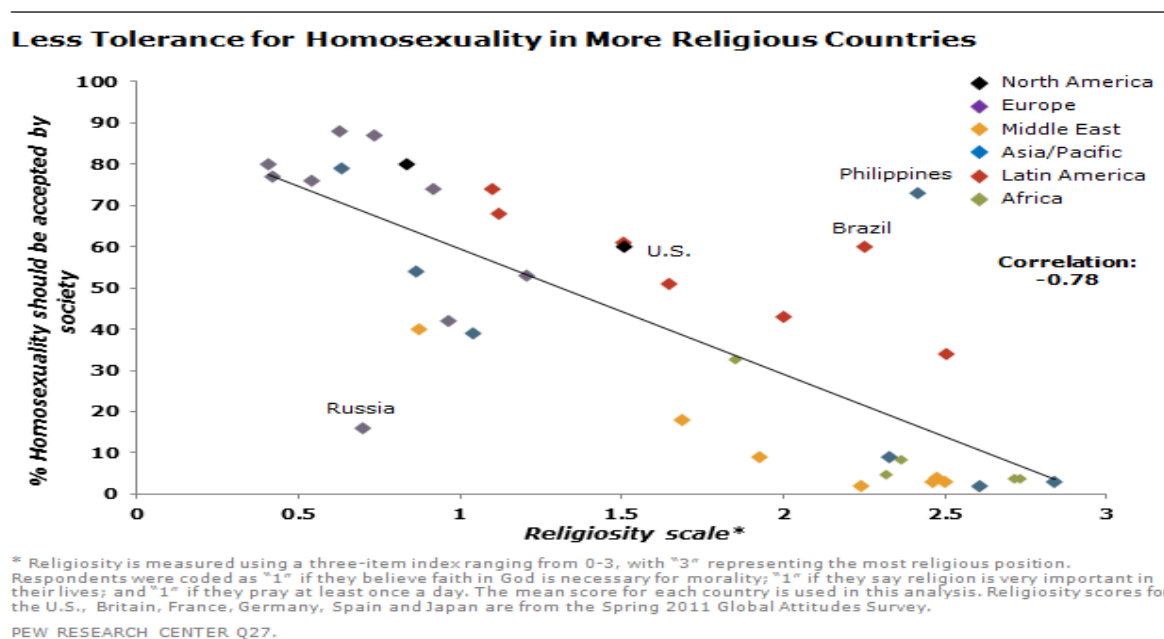
**Explanation:**

Overwhelming majorities in the predominantly Muslim countries surveyed also say homosexuality should be rejected, including 97% in Jordan, 95% in Egypt, 94% in Tunisia, 93% in the Palestinian territories, 93% in Indonesia, 87% in Pakistan, 86% in Malaysia, 80% in Lebanon and 78% in Turkey.

Religiosity and Views of Homosexuality

There is a strong relationship between a country's religiosity and opinions about homosexuality. There is far less acceptance of homosexuality in countries where religion is central to people's lives – measured by whether they consider religion to be very important, whether they believe it is necessary to believe in God in order to be moral, and whether they pray at least once a day.

Figure 5.6 less tolerance for Homosexual in religious countries

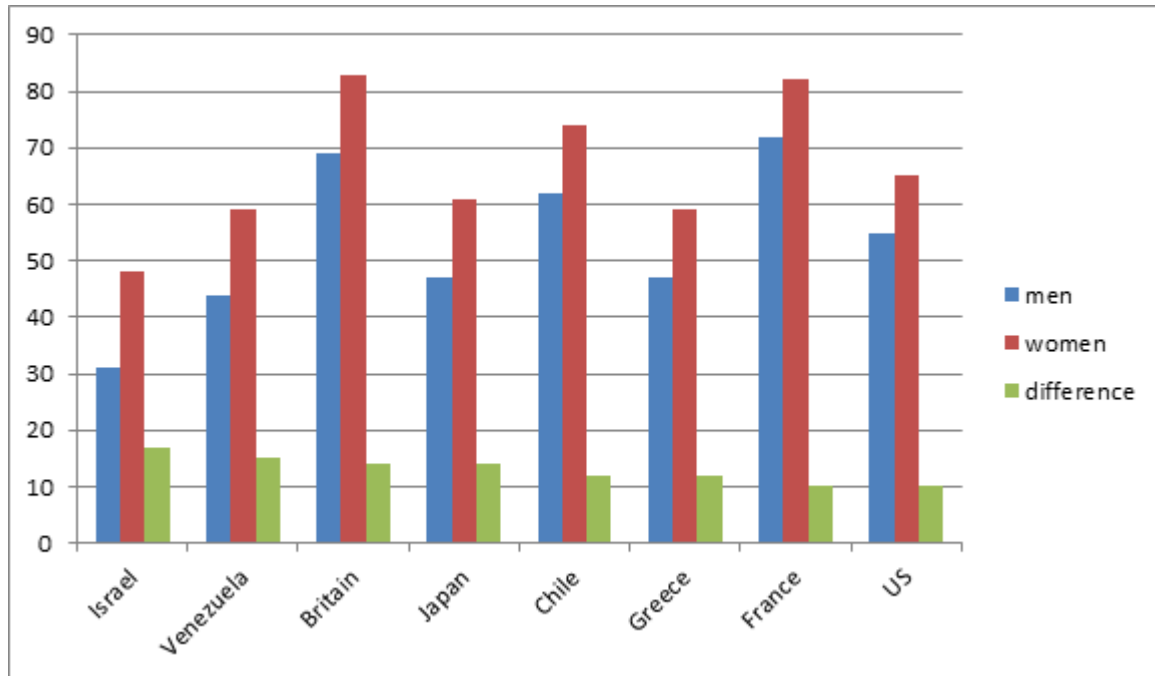


Info Pew research .org, may 2017.

Explanation:

Above graph there are some notable exceptions, however. For example, Russia receives low scores on the religiosity scale, which would suggest higher levels of tolerance for homosexuality. Yet, just 16% of Russians

say homosexuality should be accepted by society. Conversely, Brazilians and Filipinos are considerably more tolerant of homosexuality than their countries' relatively high levels of religiosity. In Israel, where views of homosexuality are mixed, secular Jews are more than twice as likely as those who describe themselves as traditional, religious or ultra-Orthodox to say homosexuality should be accepted (61% vs. 26%); just 2% of Israeli Muslims share this view.



CONCLUSION

It is a human nature to point out the differences instead of pointing out the similarity. Our society is nothing but a manifestation of our likes, dislikes and disagreements when we claim that we agree or disagree. The youth of today has taken a step forward and changed its perception about homosexuality to a great extent. Acceptance of homosexuality is also depended on whether the countries is said to be religious countries. **Countries like Spain, Italy, Germany** and many more have accepted homosexuality. Where religion is central part in the lives of people's and believe in in God, the countries are less tolerant to homosexuality. Russia who shows low scores on the religiosity scale, have higher levels of tolerance for homosexuality, i.e. only 16% of Russians say homosexuality should be accepted by society. While countries like Brazilians and Filipinos are also considerably more tolerant towards homosexuality.

ENVIRONMENTAL MANAGEMENT ACCOUNTING IN AUTOMOBILE INDUSTRY IN CULTURAL CAPITAL OF KERALA - AN INSTITUTIONAL THEORY APPROACH

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ABSTRACT

The study aims to identify the factors which determine the possibility of implementation of Environmental Management Accounting in Automobile industry. An interview was conducted among automobile industry managers, Chartered Accountants and Auditors and a sample of 50 respondents were selected. A study on benefits and challenges of Environmental Management Accounting was also conducted. The effect of CSR on Environmental management accounting and Reporting was also made. A model was developed based on Institutional Theory approach. The possibility of implementing EMA was mainly due to motivation to reduce costs, reactions to Environmental issues, legislation compliance, procedures and processes in working environment etc. The government and institutional bodies should provide adequate support for implementation of Environmental Management Accounting

Key Words Environmental Management Accounting-Impact factor-Automobile Industry

INTRODUCTION

Issues relating to environment has become a serious problem in the entire world. This is due to increasing number of Environmental threats to future. These threats include tsunami, hurricanes, flood, plastic solid waste, air pollution, use of non-renewable resources etc (Jones,2010). Because of these issues organizations have to pay more attention on these environmental problems. (Lee 2011). Cleaner and safer Environmental practices should be adopted. Public are aware of these issues through media. (Burrit, Schaltegger 2003). CSR is gaining more popularity now a days. It helps to improve companys image, and enables to increase stakeholders' confidence through FDI Investment and firm market value. Environmental disclosure is a part of CSR Disclosure and it plays a communicating role between internal management and external management and those companies with a good track record of CSR performance can borrow more unsecured debt both short term and long term.

The Automobile industry should guarantee socio economic efficiency as well as environmental requirements. The industry should take necessary steps to save energy as well as to meet domestic demand and they should participate in manufacturing chain. There is a great necessity for an efficient economic system to provide accounting information for the sound management of production and business activities in automobile sector.

Environmental management accounting is a sub set of environmental accounting. They assist management to find the impact of environment on organizations activities by making available all the relevant information for decision making. EMA acts as a connecting link between management accounting and Environmental management. The adoption of Environmental management accounting is influenced by internal factors like human resources, legislation compliance etc. as well as external factors like competitors, customers etc.

LITERATURE REVIEW

United Nations Division for Sustainable Development (2001) treated EMA systems as providing both physical and monetary information for internal decision making. This information is used within organizations for calculations and decision making. Consumption of energies, materials, disposals etc. and revenue calculation, costs, benefits etc. of the activities that have potential environmental impact were considered. International Federation of Accountants (2005) define EMA as managements action about performance concerning environmental issues. It includes reporting, auditing, full cost accounting, etc. According to Vasile and Man (2012), the traditional management accounting provides inadequate and irrelevant information in relation to environmental overheads. This enables enterprises to reduce costs and benefits that would attain by adopting EMA tools. Identifying, allocating and analysing financial information helps to assign enterprise activities and allocate cost on cause-effect relationship. It helps in attaining financial and non-financial information that helps in increasing enterprise value by determining environmental costs more accurately. Environmental costs results from enterprise activities and cause harm to society and individual. The environmental costs expressed in both monetary and non monetary terms. For improving internal decision-making process, environmental costs should be incorporated into internal cost accounting. (Bouten &

Hoozee,2018). Environmental cost allocation show that these costs will be allocated directly to cost drivers. (Chang 2013). Identification and analysis of Environmental costs help management to identify cost saving opportunities. (De Beer & Friend 2006) If the enterprise use a proper accounting system to identify and maximise financial savings in using resources that contains waste and energy emissions (Masnet-Liodra 2006). There were variations to the extend to which EMA was implemented (Phan & Baird 2018). There had been different emphasis on different industries more attention was given to manufacturing sector, chemicals, farming etc.but limited attention was given to service industries like hotels (Chan & Hawkins 2012)

Objectives of the Study

- 1.To understand the main benefits of implementing EMA in Automobile industry
- 2.To understand the main challenges of EMA and reporting in Automobile Industry
- 3.To analyse the effect of CSR on EMA and reporting
- 4.To analyse the effect of various independent variables of Institutional theory on the implementation of EMA

Statement of the Problem

Environmental pollution is one of the most important problems that the world is facing today because of its health impact on workers and their performance on one hand and society on other hand. Even those who define the units objectives to increase profits in the short term realise that the society's image affects its profits and its ability to generate revenue. Therefore, taking environmental accounts into consideration, especially environmental costs, will make the accounting profession able to provide more relevant information to decision makers especially in productivity where the problem lies in the lack of information resulting in the adoption of improper decisions that contributed to the deterioration of the state of environment.

Significance of the Study

The firms disclose environmental information voluntarily in their annual reports and websites. They provide environmental performance information and influence capital markets. The foreign companies are very much concerned about the issues like reputation, expectations of the society, legal requirements etc. as motives that encourage them to disclose environmental information. It provides information on what firms have done for the sake of community. It also helps in determining what they have contributed to the welfare of the society and what they will do in the future for the welfare and interest of the society

Research Design

The institutional theory explains how the actions of organisation is shaped by surrounding institutional forces in government offices, professional bodies and social organisations (Dimaggio & Powell 1983). The theory explains how coercive pressures, mimetic and normative pressure occur during organizational activities. Under these pressures, organisations have to follow strict regulations issued by government and regulatory bodies. When a firm operates in fluctuating market, enterprise should increase competitive advantage by imitating the actions and moves of others. In order to reduce coercive pressures, enterprise should voluntarily adopt these rules and regulations. Coercive factors have played an important role on EMA practices. The increasing pressures made by the government force the organisations intention and willingness to implement EMA practices. The main benefits that arise include increasing reputation and improved competitive advantage. According to Gray and Bebbington (2011), these motivations can be classified into legislative or market-based motivations which gives revenue and savings to company.

Automobile industry is the main industry in strategy of government. It is still in development stage in 2020-25. Coercive pressure enables these industries to adopt new techniques. The industry should try to imitate actions of both competitors and partners. Automobile industries are able to adopt EMA to advertise their brands and images, so they will be able to maximise revenue and profit.

RESEARCH METHODOLOGY

The data has been collected from both Primary and Secondary sources. Primary data was collected through a well structured questionnaire and secondary data was collected from journals, magazines, thesis and websites. The population of the study are industry managers, Chartered Accountants and Auditors of Automobile industry in Thrissur district. The sample frame is selected Automobile manufacturing unit in Thrissur district and sample unit was each manager and Chartered Accountant in sample frame.

Hypothesis of the Study

H1: The benefit will have a positive effect on implementation of EMA

H2: The coercive pressure will have a positive effect on implementation of EMA

H3: The normative pressure will have a positive effect on implementation of EMA

H4: The mimetic pressure will have a positive effect on implementation of EMA

H5: The barriers will have a negative impact on possibility of implementation of EMA

Benefits of Environmental Management Accounting and Reporting

| Particulars | R1 | W5 | R2 | W4 | R3 | W3 | R4 | W2 | R5 | W1 | Weight | Mean | Rank |
|--|----|-----|----|----|----|----|----|----|----|----|--------|------|------|
| Build up confidence in the community | 4 | 20 | 16 | 64 | 6 | 18 | 14 | 28 | 10 | 10 | 140 | 2.8 | IV |
| Improved competitive advantage | 8 | 40 | 12 | 48 | 18 | 54 | 4 | 8 | 8 | 8 | 158 | 3.16 | II |
| Improved well being and welfare of workers | 10 | 50 | 10 | 40 | 12 | 36 | 6 | 12 | 12 | 12 | 150 | 3 | III |
| Improved eco friendly processes | 8 | 40 | 8 | 32 | 6 | 18 | 18 | 36 | 10 | 10 | 136 | 2.72 | V |
| Improvement in company sales and profitability | 20 | 100 | 4 | 16 | 8 | 24 | 8 | 16 | 10 | 10 | 166 | 3.32 | I |

Source: Primary Data

Issues of Environmental Management accounting and reporting

| Particulars | Weight | 7 | 6 | 5 | 4 | 3 | 2 | 1 | Total | Mean | Rank |
|---|--------|-----|----|----|----|----|----|----|-------|------|------|
| No economic value | F | 19 | 9 | 7 | 10 | 2 | 3 | 0 | 50 | 5.48 | 2 |
| | FX | 133 | 54 | 35 | 40 | 6 | 6 | 0 | 274 | | |
| Social value cannot be converted into money | F | 18 | 10 | 11 | 6 | 4 | 0 | 1 | 50 | 5.56 | 1 |
| | FX | 126 | 60 | 55 | 24 | 12 | 0 | 1 | 278 | | |
| Lack of accounting standards for environmental accounting | F | 1 | 4 | 14 | 12 | 8 | 6 | 5 | 50 | 3.8 | 4 |
| | FX | 7 | 24 | 70 | 48 | 24 | 12 | 5 | 190 | | |
| Not a legal obligation | F | 5 | 1 | 2 | 5 | 11 | 9 | 17 | 50 | 2.78 | 7 |
| | FX | 35 | 6 | 10 | 20 | 33 | 18 | 17 | 139 | | |
| Lack of reliable industry data | F | 2 | 3 | 4 | 5 | 8 | 19 | 9 | 50 | 2.86 | 6 |
| | FX | 14 | 18 | 20 | 20 | 24 | 38 | 9 | 143 | | |
| Inapplicable assumption | F | 3 | 7 | 1 | 9 | 12 | 7 | 11 | 50 | 3.3 | 5 |
| | FX | 21 | 42 | 5 | 36 | 36 | 14 | 11 | 165 | | |
| Environmental costs will not be recorded | F | 2 | 16 | 11 | 3 | 5 | 6 | 7 | 50 | 4.22 | 3 |

Analysis of Effect of CSR on Environmental Management Accounting and Reporting

The 8 additional questions relating to impact of CSR on EMA and reporting has been asked to respondents. For analysis purpose, these questions have assigned numbers as 1,2,3,4,5,6,7 and 8 respectively. All questions have only two answers Yes or No. And also it measures the extend by putting options like very high, high, moderate, low and very low. For analysis, these options assigns rank as 5, 4,3,2,1 respectively. Each respondent is then graded on the basis of scores obtained for the “EMA and reporting” as follows:

0.5-1.5 Very low effect on EMA

1.5-2.5 Low effect on EMA

2.5-3.5 Moderate effect on EMA

3.5-4.5 High effect on EMA

4.5-5.5 Very high effect on EMA

The results of the analysis are made through the scaling technique which is showed below.

Measurement of effect of CSR on EMA and reporting

| SL No | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Total | Average |
|-------|---|---|---|---|---|---|---|---|-------|---------|
| 1 | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 4 | 35 | 4.37 |
| 2 | 4 | 4 | 4 | 4 | 3 | 3 | 5 | 4 | 31 | 3.87 |
| 3 | 4 | 3 | 3 | 4 | 2 | 4 | 5 | 3 | 28 | 3.5 |
| 4 | 5 | 4 | 3 | 5 | 3 | 4 | 5 | 3 | 32 | 4 |
| 5 | 5 | 3 | 4 | 4 | 4 | 4 | 5 | 4 | 33 | 4.12 |
| 6 | 4 | 4 | 3 | 5 | 2 | 3 | 5 | 4 | 30 | 3.75 |
| 7 | 5 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 34 | 4.25 |
| 8 | 3 | 3 | 3 | 2 | 4 | 3 | 3 | 4 | 25 | 3.12 |
| 9 | 4 | 4 | 3 | 3 | 3 | 4 | 4 | 4 | 29 | 3.62 |
| 10 | 5 | 5 | 4 | 5 | 4 | 5 | 5 | 4 | 37 | 4.62 |
| 11 | 4 | 4 | 4 | 3 | 4 | 3 | 5 | 4 | 31 | 3.87 |
| 12 | 5 | 4 | 4 | 4 | 3 | 3 | 5 | 3 | 31 | 3.87 |
| 13 | 5 | 3 | 4 | 5 | 5 | 4 | 5 | 4 | 35 | 4.37 |
| 14 | 4 | 4 | 3 | 4 | 3 | 3 | 5 | 4 | 30 | 3.75 |
| 15 | 4 | 4 | 4 | 4 | 3 | 4 | 5 | 4 | 32 | 4 |
| 16 | 5 | 3 | 5 | 5 | 5 | 5 | 5 | 4 | 37 | 4.62 |
| 17 | 4 | 4 | 3 | 4 | 4 | 3 | 4 | 4 | 30 | 3.75 |
| 18 | 4 | 4 | 3 | 5 | 4 | 3 | 5 | 4 | 32 | 4 |
| 19 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 5 | 38 | 4.75 |
| 20 | 4 | 4 | 3 | 4 | 2 | 3 | 4 | 3 | 27 | 3.37 |
| 21 | 5 | 4 | 4 | 5 | 5 | 4 | 5 | 4 | 36 | 4.75 |
| 22 | 3 | 3 | 2 | 4 | 2 | 2 | 4 | 3 | 23 | 2.87 |
| 23 | 4 | 4 | 4 | 4 | 5 | 4 | 5 | 4 | 37 | 4.25 |
| 24 | 4 | 4 | 2 | 3 | 5 | 5 | 5 | 5 | 33 | 4.12 |
| 25 | 4 | 5 | 4 | 5 | 5 | 4 | 5 | 4 | 36 | 4.5 |
| 26 | 4 | 3 | 4 | 4 | 3 | 4 | 5 | 4 | 31 | 3.87 |
| 27 | 5 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 34 | 4.25 |
| 28 | 5 | 4 | 3 | 4 | 5 | 2 | 3 | 4 | 30 | 3.75 |
| 29 | 3 | 3 | 5 | 4 | 4 | 4 | 3 | 3 | 29 | 3.62 |
| 30 | 5 | 4 | 3 | 4 | 3 | 3 | 3 | 3 | 28 | 3.5 |
| 31 | 3 | 5 | 4 | 3 | 4 | 3 | 4 | 3 | 29 | 3.62 |
| 32 | 3 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 26 | 3.25 |
| 33 | 2 | 4 | 5 | 3 | 3 | 4 | 4 | 3 | 28 | 3.5 |
| 34 | 2 | 5 | 4 | 4 | 3 | 3 | 2 | 3 | 26 | 3.62 |
| 35 | 4 | 3 | 4 | 3 | 3 | 4 | 3 | 4 | 28 | 3.5 |
| 36 | 5 | 4 | 5 | 4 | 3 | 4 | 3 | 4 | 32 | 4 |
| 37 | 4 | 5 | 5 | 4 | 4 | 3 | 3 | 3 | 31 | 3.87 |
| 38 | 4 | 4 | 4 | 3 | 4 | 2 | 3 | 4 | 28 | 3.5 |
| 39 | 3 | 4 | 4 | 4 | 2 | 3 | 3 | 3 | 26 | 3.25 |

| | | | | | | | | | | |
|---------|------|-----|------|------|------|-----|------|------|----|------|
| 40 | 2 | 3 | 4 | 3 | 3 | 3 | 4 | 3 | 25 | 3.12 |
| 41 | 4 | 3 | 4 | 4 | 3 | 3 | 3 | 3 | 27 | 3.37 |
| 42 | 4 | 3 | 4 | 5 | 3 | 3 | 3 | 4 | 29 | 3.62 |
| 43 | 5 | 4 | 4 | 4 | 3 | 3 | 4 | 3 | 30 | 3.75 |
| 44 | 4 | 4 | 4 | 3 | 4 | 3 | 3 | 3 | 28 | 3.5 |
| 45 | 4 | 5 | 3 | 4 | 3 | 4 | 4 | 4 | 31 | 3.87 |
| 46 | 5 | 4 | 3 | 3 | 3 | 3 | 4 | 3 | 28 | 3.5 |
| 47 | 5 | 4 | 5 | 4 | 3 | 3 | 3 | 2 | 29 | 3.62 |
| 48 | 3 | 3 | 3 | 4 | 3 | 3 | 4 | 3 | 26 | 3.25 |
| 49 | 3 | 4 | 4 | 3 | 3 | 3 | 2 | 3 | 25 | 3.12 |
| 50 | 3 | 4 | 5 | 3 | 4 | 5 | 4 | 3 | 31 | 3.87 |
| Total | 203 | 195 | 189 | 203 | 176 | 175 | 202 | 183 | | 189 |
| Average | 4.06 | 3.9 | 3.78 | 4.06 | 3.52 | 3.5 | 4.04 | 3.66 | | 3.78 |

Source: Sample Survey

POSS1=Alpha+Beta1BEN1+B2COR1+B3NOR1+B4MIM1+B1BAR1+e

POSS1=Possibility of implementation of EMA

Alpha Constant term

Beta 1 co efficient of variables

E Residual

The independent variables include BEN, COR, NOR, MIM AND BAR. The dependent variable is the possibility of implementing EMA

Using SPSS results are as shown below:

0.5<KMO<1 Sig.<0.05

% cumulative variance 63.5

F1 Benefit F2 Mimetic process F3 Barrier F4 Barrier 1 F5 Coercive pressure

1. Findings

Using software SPSS 20.0 with Exploratory Factor Analysis, we have some results as below:

0.5 < KMO < 1 Sig. < 0.05

% cumulative variance = 62.5%

Renamed independent variables into 5 scales and continue testing their reliability, we have all of 5 scales with the appropriate reliability (their Cronbach's Alpha > 0.6)

Table 1: KMO and Bartlett's test

BENEFIT: (F1) including variables MIM1, NOR2, COR12, MIM3, NOR3, COR9, BEN1 and BEN2;

- MIMETIC PROCESS: (F2) including variables COR5, COR11, BEN6, BAR10, MIM4, MIM2 and COR8;
- BARRIER: (F3) including variables BAR6, BAR7 and BAR4;
- BARRIER - 1: (F4) including variables BAR1 and BAR2;
- COERCIVE PRESSURE: (F5) including variables BEN8 and COR3;

Continue with Multiple Regression Analysis (MRA) we have the final result as below

- For Coefficients testing: we have 4 of variables F1, F2, F3 and F4 have Sig. < 0.05 so they are appropriate with variable POSS (possibility of implementing management accounting in SMEs in Vietnam). The other variable F5 is not appropriate meaning with variable POSS because they have Sig. > 0.05.
- For Model appropriation testing, the adjusted R square is 0.637, it means that 63.7% of the change of possibility of implementing EMA in Vietnamese automobile enterprises being explained by variables F1, F2, F3 and F4.

- For ANOVA, we have Sig. < 0.01, so we can conclude that independent variables have linear correlation with dependent variable.

The regression analysis results in the table above confirms the supported hypotheses ($P_value < 0.01$). The impact level of each factor is shown in the table below:

| Kaiser-Meyer-Olkin Measure of Sampling Adequacy | | .920 |
|---|--------------------|----------|
| Bartlett's Test of Sphericity | Approx. Chi-Square | 4004.340 |
| | Df | 666 |
| | Sig. | .000 |

Table 2: Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | | Durbin-Watson |
|-------|-------|----------|-------------------|----------------------------|-------------------|----------|-----|-----|---------------|---------------|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change | |
| 1 | .804a | .646 | .637 | .60235053 | .646 | 70.192 | 5 | 192 | .000 | 2.132 |

- a. Predictors: (Constant), REGR factor score 1 for analysis 5, REGR factor score 1 for analysis 3, REGR factor score 1 for analysis 4,

REGR factor score 1 for analysis 2, REGR factor score 1 for analysis 1

- b. Dependent Variable: REGR factor score 1 for analysis 6

Table 3: ANOVA analysis

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|-------|------------|----------------|-----|-------------|--------|-------------------|
| 1 | Regression | 127.337 | 5 | 25.467 | 70.192 | .000 ^b |
| | Residual | 69.663 | 192 | .363 | | |
| | Total | 197.000 | 197 | | | |

- a. Dependent Variable: REGR factor score 1 for analysis 6

- b. Predictors: (Constant), REGR factor score 1 for analysis 5, REGR factor score 1 for analysis 3, REGR factor score 1 for analysis 4, REGR factor score 1 for analysis 2, REGR factor score 1 for analysis 1

Table 4: Estimation results

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|-------|------------------------------------|-----------------------------|------------|---------------------------|-------|-------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | -1.954E-016 | .043 | | .000 | 1.000 |
| | REGR factor score 1 for analysis 1 | .509 | .062 | .509 | 8.226 | .000 |
| | REGR factor score 1 for analysis 2 | .121 | .062 | .121 | 1.968 | .050 |
| | REGR factor score 1 for analysis 3 | .210 | .052 | .210 | 4.056 | .000 |
| | REGR factor score 1 for analysis 4 | .142 | .051 | .142 | 2.786 | .006 |
| | REGR factor score 1 for analysis 5 | .034 | .059 | .034 | .582 | .561 |

- a. Dependent Variable: REGR factor score 1 for analysis 6

Table 5: Results

| Independent Variables | Value | % |
|-----------------------|-------|-------|
| F1 | 0.509 | 51.83 |
| F3 | 0.210 | 21.39 |
| F4 | 0.142 | 14.46 |
| F2 | 0.121 | 12.32 |
| Total | 0.982 | 100 |

| Independent variable | Value | Percent |
|----------------------|-------|---------|
| F1 | 0.509 | 51.83 |

| | | |
|-------|-------|-------|
| F3 | 0.210 | 21.39 |
| F4 | 0.142 | 14.46 |
| F2 | 0.121 | 12.32 |
| Total | 0.982 | 100 |

FINDINGS OF THE STUDY

- 36(66.66%) respondents were in the age group of 20-30 years, 6(11.11%) was the age group of 30-40 years, 5(9.25%) respondents came under 40-50 age group, 1(1.85%) were in the age group of 50-60 years and 6(11.11%) belonged to another age group excluding the above-mentioned age group. Out of which, 37(68.51%) respondents were employees, 18(33.33%) of them were students, 2(3.07%) were lawyers and 9(16.86%) of them were businessmen.
- When 54 respondents were asked if environmental management accounting has to be implicated in all the companies, 81.5% of the people agreed and strongly agreed that it has to be implicated in all the companies and 13% of them were neutral about it and also, 5.5% of the people disagreed to it. Through this response we can conclude that, even though very less number of people disagree about environmental accounting being implicated in all the companies, majority of the people think that environmental accounting has to be implicated in all of the companies as it helps the companies to keep track of what it is taking from the environment and what it is giving back in return
- The main benefit derived from EMA and disclosure is Improvement in sales and profitability of the company and the least benefit is improved eco-friendly processes
- The main challenge in connection with disclosure is social values cannot be converted into money and the least challenge is the disclosure is not a legal obligation
- The average figure shows 3.78 which indicate high effect of CSR on implementation on EMA and disclosure.
- The four variables F1, F2, F3 and F4 have Sig<0.05, so appropriate with the possibility of implementing management accounting in Automobile industry in Thrissur district
- The last variable F5 is not appropriate because they have Sig >0.05
- Adjusted R square is .645 which means that 64.5% change of possibility of implementing EMA is explained by the first 4 variables
- According to ANOVA Sig<0.01, so it can be concluded that independent variables have linear correlation with dependent variable
- The benefit factor contribute 51.83% impact on implementation of EMA
- Barrier and barrier -1 contribute 21.39 and 14.46 % impact on implementation of EMA
- Mimetic process contribute 12.32% impact on implementation on EMA
- Benefit factors have significant influence on possibility of EMA implementation
- Financial and Managerial barriers are the main constraint in the development of EMA in automobile sector
- Lack of knowledge and skills of labour resources restrict implementation of EMA
- Implementation of EMA among competitors at local and multi-national level also affect the willingness to adopt EMA

SUGGESTIONS

- The government should play a major role in promoting EMA practices by issuing proper guidelines and rules
- Appropriate training should be given to all from top to bottom level for implementation of EMA
- Tax authorities apply favoured policies like tax incentives to stimulate interest for implementation of EMA
- Accounting and professional bodies should be involved in advocating EMA by issuing a detailed framework

CONCLUSION

Environmental accounting and reporting is preliminary stage in India. The environment ministry has issued instruction in this regard to prepare environment statement. The main information given in this statement are types of devices installed for pollution control, steps taken for energy conservation, steps taken for raw material production conservation, steps taken for waste water and production process waste etc. Very few corporations disclose adequate information regarding environmental issue. It is also revealed that most of the companies disclose environmental information in a descriptive manner. Although executives are fully aware of the requirements of environmental disclosure, companies give very little information in their annual reports

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EDUCATIONAL AND INTELLECTUAL GROWTH OF BELGAUM DISTRICT DURING COLONIAL PERIOD. (1818-1947)

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ABSTRACT

This paper discusses the colonial rule over Belgaum and how it affected educational and intellectual growth in the district. There were no any educational institutions, during the ancient times in Belagavi though several Agraharas, Brahampuri, Ghatikas, Basadis Maktabs and Madaras did serve education for the people and their needs. The colonial rule from 1818 was paved the way for the development of education institutions and motivated the local leaders to approach Mount Stuart Elphinstone then Bombay Presidency Governor to have firm policy of spreading educational facility in the province. Significance development of the period was the importance given to local languages, establishment of educational boards to look into the needs of the local people, it is not the blind policy of imposition of western knowledge, the government and the Missionaries gave prominence to promote Kannada, Marathi languages which benefitted the people of Belgaum resulted in growth of several educational institutions and intellectual.

Key words: Awakening, Scholastic, intellectual, Missionaries, Community, Tribal, Linguistic, Scientific, Movement, Swadeshi, Native, Political, Dakshina Maratha, Assumption, Authority.

INTRODUCTION:

Belgaum a prominent district of Karnataka bordering with Maharastra and Goa had seen multifarious growth through the centuries. Kannada, Marathi and Urdu are the majority spoken languages of the district with their significant intellectual background. Located in a strategic region where one can observe the intermixing of racial, communal and linguistic people. The district practices diversity as all religion people have found their livelihood in this region. Thick woods of Belagavi has given shelter for the tribal communities like the *lambanis*, *siddis*, *tokarikoli* etc, have their hamlets (*tandas*) here. No wonder it has a composite culture of different languages, religions and way of life¹. It is interesting to observe how this district experienced great intellectual growth during this period due to the educational policy of their colonial masters with widespread awakening and brisk social, political and intellectual activities. Belgaum was in the forefront of national movement and Karnataka Unification movement as well. Here is an attempt to trace the educational and intellectual growth due to the introduction of modern education as a result of the policies of the British who were ruling over India at that time.

Background:

During the 17th century Belgaum became part of the Maratha rule and in 1818 passed into British control under the Bombay province it remained in Bombay Province up to 1947]. Belgaum was the part of southern Maratha country and it included in Canarese (Kannada) districts of Belgaum, Dharwar and Konkan. As administrative concern Kannada speaking areas were included in this region. At that time Belgaum had seven taluks, now it has thirteen taluks.

The British had firm policy towards implementation of western education, though there was argument among the western and Indian intellectuals. Surprisingly the British officers wished to continue existing ancient modes of education, but Indian elites preferred to have western education. The minutes of Macaulay, bold policies of Lord Bentinck and Mount Stuart Elphinstone in Bombay Presidencies led to widespread rise of schools in Bombay presidency which included Belgaum. Thus Belgaum experienced rapid changes in its educational and intellectual growth. However it is the Christian missionaries who opened schools in Belgaum². Thus by 1830's Marathi and Kannada schools were established.

The British had a firm policy of introducing western scientific education in their provinces. Macaulay's minutes, Act of 1835 was a milestone in spread of western education. But the Bombay province under the Governorship of Elphinstone had broad based educational growth. His intention of maintaining ancient knowledge through Poona Sanskrit College as well as decision to spend (*Dakshina*) fund It was the fund left by the Peshwas for spending a lump sum amount of 50000 annually on donations to Brahmins alone. After the assumption of power, most of the English officers demanded the said amount to be spent towards spread of education of all sections brought tremendous growth of intellectual and educational activities in the province³.

Belgaum being part of its southern province benefitted much. It witnessed opening of several schools. It is not just the provincial government, but also the work of Bombay native Educational Society, relentless work London Missionary society⁴ and catholic institutions, philanthropists like Shahu Maharaja, Jyothiba Phule, Savitri Bai Phule⁵. Later on due to influence of freedom fighters the district experienced much intellectual growth.

At the outset it is argued that it is British necessity of having scholars and administrators to coordinate between Indians and the British officers. Necessity of having translators, coordinators for the British Empire considered to be major provocation for introducing English education. Another argument was of the role of Christian missionaries who showed keen interest in opening schools not just English schools but schools of regional languages like Marati, Konkani, Kannada, Tamil, Telugu etc.(in South India). Anglesites argued that they wished India to be a greater power with their ancient knowledge, and modern outlook, but contrast was the development as Amiya P Sen argues that orientalisers itself is guilty of unwittingly strengthening orthodox ways⁶ Christian Missions were keen on learning regional languages as they wished to translate Bible into regional languages⁷

Especially in Bombay Presidency we come across impetus was given to local languages and continuation of regional variations' while introducing western education in India the British faced the dilemma of whether to continue the old methods like religious teachings, patronise *gurukula*, Sanskrit schools, *madarasa* and Arabic schools education or to have western education in motto. Both of them were in long usage and had served the society and intellectual life of the people for centuries. Both of them were religious based and as we observed they had limited goal of attainment of salvation, and provided spiritual guidance. Few among Europeans and few educated Indians demanded. Thus by 1820'as Most of the Christian missions worked in Indian educational field, and also harbingers of social change⁸. Even before establishing churches, they established schools, dispensaries, printing press, that too among neglected lower classes of India.⁹

Dakshina was given by the Pehwas annually to the Brahmins as charity; it amounted to around 50000 rupees¹⁰ 'The said amount (50000) to be spent on establishing and running a Sanskrit college at Poona. Governor Mount Stuart Elphinstone was responsible for the establishment of 'The Bombay Native Education Society', and the Directors of the Company agreed to spend '*Dakshina*' amount for the cause of western education.¹¹ In 1823 Mount Stuart Elphinstone in his Minute argued the necessity of improving the mode of teaching and to increase the number of schools, He insisted on the government to supply the textbooks used in schools¹².

The argument between the Anglisits and orientalisists went for a decade Occidentalists led by Macaulay felt that Indian educational system was inadequate to meet the rapidly changing world. He is of the opinion that both Sanskrit schools and Arabic Persian schools with their educational contents were not tested, scientifically proven, did not allow the spirit of enquiring, and it did not stand the test of time. Indian reformers like Rajaram Mohanroy¹³ Radhakant Deb and others demanded the English company to invest in western education and to propagate scientific education. Raja Ram Mohan Roy vehemently opposed the opening of Sanskrit college by the Company In 1823 he wrote a memorial to government advocating English education and strongly opposes the establishment of a new Sanskrit school.¹⁴ But the strong pressure came from the side of reformist Indians. Educated class of the time was aware of the spread of education as only remedy for many of the social evils. Most of them especially the reformist of western India showed their strong motivation towards spread of education. Bal Shastry Jambekar M. Malabari, M.G, Ranade, K.T.Telang, Vishnushstry Chiplunkar, strongly put forward their ideas on need of modern education to masses

The attempts made by Indians as worthy of mention as that of Colonial masters. Indian leaders are Jyothiba Phule and his group associations like Bombay Native Education Society¹⁵ Satyashodak Sangh institution like Deccan education society, Pune Sarvajanik Sabha, work of Pandit Ramabai, M.G.Ranade. Among them the foremost name will be that of G.K.Gokhale who utilised his position as member of Bombay Provincial Council and later as member of Imperial Legislative Council by presenting Bill after Bill to demand Primary education Free and Compulsory. Gokhale, a great thinker, and foremost educationist, who always thought of improving the conditions of his countrymen,. His major concern was for providing good foundation to future generations through education of India. He was aware of the social, economic and cultural disparities among the Indians. First such act was the 1835 where by the Bombay government decided to run the administration of Southern Maratha country should be in Kannada and education must be in Kannada. This order let to opening of a number of Kannada schools. Belgaum benefitted by the act, whereby a number of Kannada schools increased

1882 Hunter Education commission Report is another milestone which led to widespread opening of primary schools in Belgaum. Jyothiba Phule vehemently put forward the necessarily of Compulsory Primary

Education¹⁶. The commission considered this view and recommend the encouragement to Primary Education both Kannada and Marathi along with Urdu schools, institutions of higher education, starting of night schools for those who were unable to continue their studies day time due to hindrances. In 1918 passing of Private member bill of Vitalbai Patel in Bombay Assembly of 'Free Compulsory Primary education which is known as 'Patel Act' opened new vistas for spread of basic education in Belgaum. No doubt within a short span of time schools and educational institutions sprang up in Belgaum district within a short time. London Missionaries were in the forefront of establishing schools and colleges. The leadership taken by London Missionary society, Basel mission is praiseworthy. The work of Rev. Taylor, Rev. Hands are praiseworthy. They encouraged both kannada, Marathi education and western education in Belgaum.

Growth of educational institutions: The Missionaries utilised the Presidency Act of encouraging Kannada schools in southern country of the Presidency. In 1830 government established a Marathi school in Belgaum. It was the first school in Belgaum¹⁷. 1832 saw the establishment of first Anglo Vernacular School or English school by London Missionaries. Rev. Tailor was in forefront of spreading education among the people of Belgaum. His services to the people of the district are noteworthy. By the Act of 1835 the Presidency government was to spend its resources on education in Kannada in Belgaum and Canara districts, led top starting of schools.

A Kannada school was established in 1832. By 1838 there were schools at Soundatti, Sampagaon, Bidi and Bailhongala. Most of these schools were co- education opening for boys and girls. By 1850 most of the taluks of Belgaum district had higher primary schools. By 1860 there were six High schools in the district both government and aided¹⁸.

In 1840 Bombay government with the intention of streamlining educational system throughout the province established the Board of Education. All the educational institutions in the province were brought under the direct supervision of the Provincial Education Board. As there were ambiguity in running of all sorts of schools from lower level to Higher education in 1855 Director of Public Instruction at Poona. 1884 Act of Local Self government gave the responsibility of maintenance of responsibility of Primary schools in their jurisdiction, and made extension and improvement of primary education to local bodies like Taluk Board, District board and Municipalities. As a result of these Acts and provisions made for the school education Belgaum district saw the rise in literacy and spread of education among the masses.

The statistics of the Census of 1881, 1911 and 1921 reveals the growth of educational institutions in the region in 1881 the rate of literacy in Belgaum was 4.5%. Out of total Population of 8,63,956, 38,774 were literates, among them 780 were women¹⁹. 1901 Census reports show the rise in Literacy rate to 9.82% Total men educated were 49,379, and 1504 women were literate(0.3%) 1911 census, there were 43, 882 were literate: among men it was 41,592 literates a 9% , and 2290 0.5% were women²⁰ 1921 census the rate of literacy among men was 10 50-688 men and 5527 were women (1%).

The onwards there was steady rise in literacy in the district The study of the Report the period from 1912-13 to 1916- 17 show that by that time government of Bombay Presidency had made all round progress in educational field. In certain extent it was ahead of other Presidencies. The Presidency had made provision for not just formal schools, colleges , education, female education, but also it provided for special schools for the children of agriculturists, factory workers, technical and industrial education of Muslims, Backward classes, tribal children, special schools, Medical and Engineering education.²¹.

Text books: Opening and running schools was not that easy. The educators should look into the needs of children and method of teaching to be followed was to be fixed Christian missionaries had a Kannada text book committee which included along with the London Missionaries Balashastry Jhambekar, local educational officer as Chairman and K.B. Gadgil, Srinivasa Subhaji as members. Later on the Presidency government followed a definite guideline to have textbooks which were utilised in southern Marata territory. Bombay government looked into aspect of having textbook Committees for each language and subjects. Thus southern Province to which Kannada speaking areas for which are Belgaum, Dharwar and Canara part had a separate committee for Kannada textbooks.

Christian Missionaries published first Kannada book, '*Esophana Neetikathegalu*' a book translated from English of moral stories for children was printed at the printing press established at Bellary. Followed by '*Ganita Pustaka- Poorvanka*', '*Shalapaddhati*' were printed and ion wide circulation²² 1840 saw the rise of a school at Gokak. In 1850 first High school Government High School was established in Belgaum with 12 schools By 1866 there were 56 schools with total student strength increased to 4380. These initial efforts

resulted in rise of hundreds of schools in Belgaum. By 1873 there were 119 schools with strength of 8153; Missionary societies provided ample growth of educational institutions in Belgaum.

Canarees (kannada) Local fund budget for the year 1871-72 contains the details of stipend for kannada students training at Belgaum²³. In 1873 same procedure was followed to release of enhanced grants in the order no 1159, dated 21st March 1873, by 1880's most of the government schools established by government (Primary, Higher primary) school were kannada schools

Sardar's High school Sardars High school was prestigious educational institution of Belgaum, with a long illustrious history. Its growth and usefulness reflects on the multidimensional growth of educational and cultural institutions of the district. There are strong motivation and patronage given by the private individuals. The school was started by the donations of several *Desais* and *desagatis* of southern Maharashtra, and Karnataka. It was established with the intention of providing standard education for their children. For several years it was run by the donation of these Sardars, later on it received regular grants from Bombay government Budget²⁴.

As several aristocratic families of Jagirdars, Inamdars and Subedars of surrounding areas admitted their children; it ran for several years under their patronage. It was very popular and students came from all sections to study here. Sardar's High school in Belgaum was founded by Sardars of Southern Marata country in 1850. It became very popular and was made a public school in 1872 turning it into a government institution²⁵ Estimate for the year ending 31st March 1874 Provincial Services No.1314, No 3994 Later on in 1882 the government took over the administration of the school and got its own building with a public subscription. Later it came under government's grant-in-aid system.

By 1882 there were 15 aided schools among them 6 were run by London missionary Society, three first grade European –Eurasian, 6 vernacular schools; out of which 5 for boys and one for girls. Another interesting growth was the private school at karikatti in Parasagada taluk. The school was established by Gurubasappa Gurushantappa in 1865. The school provided free education to children. In 1882 there were 30 students in the school. It was a successful experiment in that interior area. By 1924-25 Athani taluk had schools for boys with 675 students, two girl's schools with 202 students. It is noteworthy to observe Athani Municipality made education free for children in schools. During the same period Bailhongala had two Municipal schools with 530 students and two girl's schools with 294 students.

Belgaum had 12 Municipal schools with 2419 boys studying, in six municipal schools for girls there were 806 girls students. There were six non municipal aided schools for boys in which there were 406 students, there were 4 girl schools with 304 students studying. Gokak Taluk had 5 schools for boys, in whom there were 521 students, one school for girls with 131 students. During the same period Nippani taluk had 6 schools for boys with student strength of 985. There was one girl's school which had 111 students studying. The Native state of Ramdurg had one school in 1872, and it increased to two schools next year. But there was decline in student strength from 95 in 1872 to 81 in 1873²⁶.

Bombay Primary Education rules 1924- as amended up to 1933 Education Department, Bombay, October 1924, P-2. It also stated how the municipalities and local boards would establish School Boards, and submit its annual budget and all alterations there in for sanction of the local authority. The Act clearly stated that every municipality to have a school board. By now the Presidency Government has passed Free and Compulsory education up to Primary schools. The resolution presented by Gopalakrishna Gokhale in Central Legislative Council calling for making the Government responsible for providing free Primary education and making it compulsory. Later on Siddappa Kambli in Bombay Presidency Council presenting the said resolution which was passed, making education up to primary level free and compulsory.

These Acts and initiative of the government as well as private persons led to spread of education rapidly. Belgaum district benefitted due to all these developments and was proud enough to have a large number of institutions, and more number of children admitted to schools compared to any other district of Bombay Presidency.

Urdu Schools: Education among Muslims was not encouraging. There was only one Urdu school at Belgaum. Where Arabic, Persian were taught. But there was no improvement in education among Muslims. Many of them preferred English and Vernacular education. Compared to other groups Muslim education was lagging behind. Thus Hunter Commission recommended special educational facilities for Muslims. It also recommended patronising indigenous education, and normal schools. Children should be motivated by grant of scholarship, making education free for the poor²⁷. BY there were four urdu schools in Belgaum district which were popular but getting good teachers knowing Arabic was a problem

The significant factors that influenced spread of education among women was the work of Christian missionaries, who usually encouraged girls to join the school, but when the traditionalists obstructed educating girls, liberal minded government, though not interested in interfering in local customs. Thus the Indian reformers supported the cause of female education. M.G.Ranade, Pandit Ramabai, Jyotirao Phule and his wife Savitri Phule had rendered valuable service to the cause of female education in Maharashtra, which also effected changes in Belgaum. But Colonial Educational policy did not encourage female education is proved by the fact that Bombay University did not allow women candidates for entrance examination till 1883. Which probably kept the ratio of literacy in Bombay region as the female education was lagging; it brought down the measure taken in the field of general education. Realizing this lapse Bombay Government in 1883 appointed Maharashtra Women Education Commission at Bombay. The support given by Prof. Karve, Pt Ramabai in this regard is noteworthy.

In 1904 Prof Karve took the lead of establishing a college exclusively for women. The result was starting of S.N. D.T College in the heart of Bombay, which has the pride of place among the institutions of Higher education later grew into Women's University. Its example was followed by others. But even then in 1937 percentage of educated among women was just 3%.

Jyotirao Phule expressed his displeasure on curtailing the freedom of young girls for education. He was of the opinion that to education is the weapon through which one could cut off the tree of ignorance. His preference was for female education for reforming the world through emancipating women. His belief in the maxim 'The hands that rock the cradle will rock the world' was stronger, thus he decided to open schools for girls. When he couldn't get lady teachers to teaching girls school, he took the assistance of his wife²⁸.

He taught her the rudiments of basic learning and teaching, trained Savitribai, and made her the teacher in his school. Thus Savitribai was the first Indian teacher Savitribai faced hurdles on her way to school, the orthodox did not a woman getting out of the house and teaching the children of lower classes. She was being taunted, was humiliated. But she proved to be a bold lady, supportive of her husband's ideas; equal to the reformist zeal of her husband Jyotirao Phule. Pandit Ramabai is another name helping in spontaneous growth of educational institutions for women. As we noted earlier she opened Widow Homes, orphanages and schools for helpless women

Private education institutes

Karnataka Lingayat Education society is a milestone in the growth of education in Belgaum. It is established in 1916, it marked the beginning of swadeshi spirit, and the deep hunger for education among the people of the district. Its valuable services reflect on the trend of modernity in the society of the district. And other private education institutes are Jadhavji Education institute Athani 1918, Maratha Mandal Education institute 1930 and Rani Parvati Devi College 1945 etc.

Night schools (Adult education)

As already noted there was utter need for night schools for students who could not continue education. The Annual report of the D.P.I 1872-73 observes: 'there are elementary classes intended for the benefit of cultivators, labourers, and poor artisans, shop-keepers who are desirous of acquiring a rudimentary education, but have no leisure to devote'²⁹. By 1892 there were two night schools in Belgaum district. In one school there were 25 untouchable students were studying in 1883.

By 1884 Local Bodies, Municipalities made responsible for conducting schools and education of the children. From 1937 the same scheme was turned in to Adult education programme. Adult education was part of night schools; the adults who could not continue their education were encouraged by the governments to continue their education.

In 1937 Bombay government established an Adult education Board to look into the problems of adult education and to expand the facility for Adult education mass literary campaign, as Bombay government selected Athani taluk for its implementation. In 1947 the government changed the name of the programme as Social education³⁰. Adult education was also part of Congress activities. They conducted adult education classes in their respective places to create awareness among the masses.

With the purpose of spreading education among those who were unable to go to schools, the Shetkari Education Committee established. 25 night schools at Belgaum, Hukkeri, Khanapur started Chikkodi, Rayabhad, Athani and other places which mainly created awareness of literacy among farmers, labourers, and other poor people of lower classes³¹.

Siddappa kambli was the prominent educationist and political reformer of Karnataka. He represented Karnataka regions in Bombay Legislative Council for a long time. He utilised his membership of the Council to bring several useful bills. His Primary education Bill of 1932 was prominent. Deputy Chhannabasappa is a government officer in education department of Bombay Presidency, Deputy Director appointed for Dharwar and Belgaum districts had rendered yeoman service to the educational field of these areas, especially for kannada schools, language and literature. Deputy Channabasappa was born in 1633 in Dharwar. His higher education was at Poona, while at Poona he observed the utter neglect of Kannada regions, and language, domination of Marati language and culture was suffocating Kannada people. In the urge for national education one can observe two stages.

Effect of Swadeshi movement: Belgaum had its own share of this stage of *swadeshi* and establishing national schools. It is the call given by Balagangadhar Tilak that had much effect over Belgaum. Establishment of Ganesha Vidyalaya in 1907 is an attempt the foremost national educational institution in Belgaum. Later on under the guidance of Mahatma Gandhiji a number of national schools, basic education school, and institution at Hudali were established. As Belgaum was in the forefront of national agitation, Mahatma Gandhiji presided over the annual Congress session at Belgaum in 1924. (It was the only session where Mahatma presided over the sessions of National Congress)

CONCLUSION:

To conclude the leadership of Belgaum in education could be referred under different headings of Government officers, Missionaries, followed by elitists from outside the district, but had great influence over the people here like Shahu Maharaj, Jyotirao Phule, M.G. Ranade, G.K.Gokhale, Mahatma Gandhi followed by local elites like elitists like Desai's, of princely states like Chchadi, Raibag, etc, Aratalu Rudragowda, Kambli Siddappa, Deputy Channabasappa, Annu Guruji, Fakruddin Araliokatte, Gurunath Jire of Athani Dayanand Aralikatte, founders of K.L.E and Nationalist leaders, should be considered as the leaders who had significant role in moulding systematic education and intellectual activities like growth of journalism, wide range of literature in Kannada, Marati, English, Urdu, Hindi etc. Many of them Like Gangadhar Rao Deshpande, Bettagari Krishna Sharma were not just the activists but also known for their social and literary contributions. Belgaum district benefitted much by the several education policies which were introduced by Bombay Presidency and awakened the several minds to bring the developments in the educational institutions in the district. Directly or indirectly the colonial rule brought tremendous intellectual and educational growth by the policies of colonial rule.

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KARATE TRAINING BENEFITS FOR GIRLS

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INTRODUCTION

Karate is one of the self-defense games; the karate training helps in present day's society situations. Girls and Women, who are always referred to as the weaker sex when it comes to physical strength, they are victims of crimes like sexual assault and domestic violence frequently. It day is girls a Sexual harassment and bullying can happen in person or online. In a society where crime against women has increased unexpectedly in the past few years, it has become an absolute necessity for girls and women to protect themselves from undesirable situations.

The benefits of karate learning for girls and women's include social development; Karate is frequently still regarded as a "boys sport," which could not be more incorrect. Our Karate skills and programmes are extremely beneficial for girls, as they learn to sharpen their skills, to be fearless, and, most importantly, to not limit themselves. On to get of why karate encourage girls and women, the reality is that learning karate is self-defense skill is necessity for both girls and women, and there are many reasons why karate training at world karate federation is perfect for them.

Benefits of Physical strength and skills

Karate is that it helps to build long-term strength – both mentally and physically. Each martial art, whether it be boxing or May Thai, engages every muscle group in a full body workout. Not only does it build muscle, but it also improves flexibility and balance over time. Karate is an excellent choice for increasing girls and women's fitness and providing them with the opportunity to release all physical energy. Fine motor skills are developed, muscles are built, and speed, flexibility, balance, self-defense, and self-confidence are all improved. All of those advantages will carry over to any other sport that girls and women's try in their lives. Karate is an excellent way to combine fun, physical strength, and the importance of staying active as the karate.

Benefits of self-defense

Many people may think that karate are all about fighting, which can be off-putting for some girls and women. It teaches them to defend themselves using their own body strength and intuitive moves. Karate has been known to be the most popular form of martial art for self-defense. It focuses on on-the-ground training, using the attacker's momentum against them by applying pressure to certain joints. A few karate training in, you'll start to feel empowered and more confident in protecting yourself no matter what size your opponent may be. In karate training and programs everyone learns the necessary skills to defend themselves against physical attacks. Also, a strong mind set is developed that allows girls and women's to react correctly if they ever get into a violent situation. More about the importance of self-defense skills for girls and women's teenagers learns.

Benefits of mental strength and life Lesson

Karate also helps to build mental strength as it requires focus and discipline. As much as strength comes into play, it will also be taught that strategy is equally important. Many times, individual may get knocked down and might feel discouraged, but the discipline involved This helps to increase confidence and mental strength. Girls and women's learn many important life lessons in our karate class. At Sovereign Karate, we help girls and women's develop their character and support them as they grow up. Every lesson, the girls and women's are physically, mentally, and emotionally challenged, and they learn to solve any problem that may arise. The process of learning something new and succeeding is beneficial at all stages of life and increases confidence. The girls and women's learn that hard work and dedication pay off and those we can achieve their goals in society.

Gender Equality

Gender equality is promoted at the highest level in Karate in institution. Girls and boys can both be excellent karate practitioners. Both girls and women's do the same exercises. They are treated the same way, fight the same way, and travel in the same diversion. Girls learn that they can learn the same skills as boys by training together, which promotes self-esteem and the understanding that girls are not limited by their gender.

Benefits of improve cardiovascular endurance

Girls and women's are picking up karate training in a great way to kick-start a healthier lifestyle. punching and kicking can burn up to 13 calories per minute, which means burn up to 400 calories in just a 30-minute karate

training For this reason, many girls and women Showed practice Karate to lose weight, increase their fitness and build lean muscle. But often they simply end up loving it so much that they get hooked.

CONCLUSION

Some sports are only played during specific times to improve the physical fitness. But Karate practicing is totally body workout and self-defense techniques. Girls and Women, who are always referred to as the weaker sex when it comes to physical strength, are victims of crimes like sexual assault and domestic violence frequently. Karate training helps to girls and women's. To get discipline, physical strength, self-defense, mental strength and life lesson, gender equality, improve girl's cardiovascular endurance. The benefits of Karate training are well-known, and popularity has given the new insight and perspective. In a society where crime against women has increased unexpectedly in the past few years, it has become an absolute necessity for girls or women protect themselves from undesirable situations. Karate is one of the martial arts that have a good impact on everyone's life.

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**PERCEPTIONS OF UNDERGRADUATE AND GRADUATE EFL STUDENTS ON FACTORS
AFFECTING SUCCESS IN ONLINE ENGLISH CLASSES**

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ABSTRACT

Maintaining ELT quality in the Covid-19 pandemic it's a kind of remedy. The concept is simple: share useful knowledge with teachers, students, and anybody else who is interested about how to improve education to deliver high-quality online education in the areas of EFL teaching and learning. In recent decades, many Europe nations' foreign language education has evolved toward communicative training. However, there is a disconnect between policy and practice, according to academics. Using a 20-item questionnaire, this study investigated the perspectives of Italian EFL undergraduate and graduate students about variables impacting their performance in learning English via online classrooms. Both similarities and distinctions were discovered throughout the investigation. Skills in utilizing computers and the Internet, as well as the capacity to undertake assignments independently, finish them on time, and prioritize assigned tasks, were scored higher by both groups than readiness to ask questions and engage in class discussion. The undergraduate group, on the other hand, valued their communication and linguistic skills more than the graduate group. The graduate group, on the other hand, considered having a conducive learning environment, self-management skills in terms of being able to manage time to attend class, ability to stay focused, preparation for a lesson, ability to control oneself from external distraction, and motivation and attitude in terms of having a purpose to learn, seeing online learning as opportunities, and accepting online classes as a way of learning to be more important than the undergraduate group. Understanding students' perspectives may help course designers create better online courses in the future. This research investigates variables that encourage or impede EFL instructors' application of Communicative Language Teaching (CLT) in Italian college English classrooms in order to include teachers' voices in curricular adoption of the communicative approach. The results revealed that instructors, students, the educational system, and the applicability of CLT in the local environment were all variables that influenced CLT adoption. In addition, various situational restrictions were discovered to be impeding CTL implementation. To assure success in applying the CLT strategy, the paper offers practical ideas for teachers, educators, and policymakers to enhance teacher training, curriculum design, and situational restrictions.

Keywords: online English learning, undergraduate and graduate EFL students, students' perceptions, the COVID 19

INTRODUCTION

In March 2020, online classrooms became a major substitute for traditional face-to-face learning in Italy, in order to help prevent the spread of the COVID-19. All universities have shifted their classrooms to online learning, including live-streaming and recorded lectures and homework. Instead of offering final exams, university professors were instructed to change their course curriculum to an assignment-based study program to assess students' progress.

University professors and students around the country have been impacted by a quick transition to online education. As a result, institutions take steps to help both professors and students. Teachers received distance training to develop their technical and instructional abilities for using online platforms successfully.

The authorities, on the other hand, seem to ignore students. The distribution of internet SIM cards was mentioned as a move taken to assist them (Rattanakhamfu, 2020). Although students have no difficulty with technological accessibility in general, it is still debatable if they are ready to study online.

Although online learning is often regarded as a valuable teaching tool, the abrupt transition has presented a significant difficulty. Because studying online demands different commitments than learning in face-to-face classrooms, and because not all students had prior experience in an online learning environment, it was clear that some students struggled to adjust to online classes throughout the trial period. Teachers should be attentive to what students perceive as elements impacting their learning performance in online classrooms in order to assist them optimize their learning.

The researcher was inspired to conduct this study after seeing disparities in undergraduate and graduate student behavior in her online English courses. According to the study, undergraduate Gen Zers who were exposed to smart gadgets and the Internet at an early age adapted better to online learning. As a result of this discovery, the

researcher noticed a need to assist students in overcoming the problems of online learning adaption. As a result, the purpose of this research was to look at the perspectives of variables impacting online English learning performance among Italian undergraduate and graduate EFL students.

A LITERATURE REVIEW

Online education is described as a kind of remote education offered through computers and the Internet, with at least 80% of the course material given online (Allen & Seaman, 2008; Shelton & Saltsman, 2005, as cited in Kentnor, 2015).

Online learning may be both synchronous and asynchronous, according to Acosta-Tello (2015). While synchronous learning happens when students engage in the classroom at various times and in different locations, asynchronous learning occurs at different times and in different places. Platforms such as video conferencing, teleconferencing, group chats, live webinars, phone call-ins, and virtual classrooms are used in synchronous learning to simulate a live classroom setting. Because real-time contact is not necessary in asynchronous learning, it relies on tools like e-courses, online forums, pre-recorded audio or video classes or webinars, e-mails, blogs, and web pages to communicate.

Distance learning, both synchronous and asynchronous, has long been utilized in Italy for educational objectives, whether to supplement face-to-face sessions or to supply course material.

Platforms like Zoom, Google Hangouts, Google Classroom, and Microsoft Teams have been utilized to conduct online learning in this digital age. Prior to the COVID-19 controversy, these platforms were mostly utilized to exchange course materials as an add-on to traditional face-to-face delivery.

The Self-access Center (SAC), a self-learning center with a variety of resources and learning materials ranging from photocopied exercises with answer keys to audio, video, and computer software for language learning, has been used in Italian universities for many decades after its first establishment at the University of Cambridge (Harding-Esch, as cited in Morrison, 2008).

Now that technology has advanced, pupils' self-access to knowledge and how they are taught it has altered. Synchronous online learning, made possible by the Internet, allows students to access course materials and collaborate in groups. Teachers may utilize response systems to assess their students' comprehension of course contents and even modify the pace in real time if necessary. Students may also revisit the classes by watching video recordings of the lectures.

Factors Affecting the Success of Online Learning

The literature has analyzed, researched, and debated many types of commitment required for success in online learning and online English learning.

Doe, Castillo, and Musyoka reviewed past online readiness evaluations in 2017 and designed an instrument to be utilized in their research based on six constructs: learner characteristics, student behavior, cognitive engagement, behavioral engagement, student self-direction, and student attitudes. Peechapol, Na Songkhla, and Luangsodsai performed a systematic review of studies (2005-2017) in 2018 to look at the elements that influence online learning. Such aspects were discovered to include online learning experience and knowledge, feedback and reward, online communication and engagement, social impact, and learner motivation and attitude. Self-directed learning, learner control, and motivation toward e-learning were employed as the three elements in a more recent research by Keskin and Yurdugul (2019) to investigate e-learning delivery choices. Armstrong did a research in 2011 that looked at communication, technology, course structure, learning environment, evaluation, and resources, among other things. In their research, Mohammadi, Ghorbani, and Hamidid (2011) found that e-learning is similar to face-to-face learning in that both rely on two primary factors: learner capacity and technology gadgets. Beaudoin, Kurtz, and Eden (2009) used self-motivation, ability to manage one's own time, capacity to learn with limited support, relationships with online facilitators, enjoyment of the challenge of learning, confidence in one's ability to achieve learning goals, ability to express one's ideas, ability to cope with a non-structured setting, relationships with other online learners, and familiarity with technology as criteria for being successful online learners in a survey. Certain studies with ESL and EFL students have been undertaken based on the literature of online language learning.

Six essential success variables influencing the efficiency of online language learning were presented by Alberth (2010). Student characteristics, instructional design (pedagogy), instructor and student assistance, teacher qualities, technology, and language skills characteristics are among the variables. The involvement of instructors, technological experience, and students' attitudes were all factors in Haron, Ziad, and Ibrahim's (2015) questionnaire. In the same year, Jabeen and Thomas performed a research, however the outcomes in

online learning were disappointing. Students cited inadequate engagement, a lack of rapid feedback, insufficient chances for learning and practicing skills, and a lack of instruction in utilizing the requisite technology as some of the reasons. The empirical data indicates a few research done with Italian EFL students addressing variables impacting online language acquisition, based on a review of the existing literature.

According to Chomphuchart's (2017) research, disciplines of study, computer abilities, and geographical locations all influence internet use. The research by Kuama and Intharaksa (2016) focuses on cognitive, metacognitive, resource management, and emotional methods in relation to online English learning outcomes. Ramsin and Mayall's (2019) research, on the other hand, was the only one that looked at synchronous online learning self-efficacy. There were significant relationships between self-reported computer abilities, comfort levels utilizing the Internet, self-reported English proficiency scores, and past online learning experiences and online learning self-efficacy levels. In Italy, studies on the effects of online English learning have been conducted. A number of research in Italy have looked at the impacts of synchronous online English learning. Asynchronous online learning, on the other hand, has been the subject of more research.

According to Deerajviset's (2014) review of research (2004-2013) in the field of technology in EFL teaching and learning in a case study in Thailand, the use of technology improved language learning in a variety of areas, including listening, speaking, reading, writing, vocabulary, grammar, and other integrated skills or areas. According to Wongpornprateep and Boonmoh's (2019) research, using VLE websites may assist students improve their language learning by allowing them to learn from their errors and pushing them to aim for a better or perfect score in subsequent tries. Cedar (2013), on the other hand, discovered no substantial difference between using traditional classroom tactics and studying through the Internet. There was just one research that looked at synchronous online learning (Dokchumpa, 2019). The study's findings revealed that online education is useful since it allows students to learn freely due to its ease in terms of time and location.

METHODOLOGY

The goal of the research

The goal of this research was to find out "what characteristics influence undergraduate and graduate students' performance in online English learning?" The major goal of this research is to see whether there are any changes in views of synchronous online English learning between undergraduate and graduate students.

Participants

The study enrolled 104 students (51 undergraduates and 53 graduates) in synchronous Google Meets and Google Classroom sessions of English courses delivered by the researcher. The undergraduate students ranged in age from 18 to 23, with 20 men and 31 girls. The graduate students ranged in age from 24 to 48 years old, with 23 men and 30 females.

Instrument

The data was collected using Goggle Forms and a 24-item questionnaire that included four open-ended questions on personal information and 20 items about diverse aspects impacting online learning performance. Technology capabilities (Item 1), communication and linguistic abilities (Components 2-6), self-management skills (Items 7-13), motivation and attitude (Items 14-19), and a conducive learning environment (Item 20) were among the 20 items categorized into five characteristics discovered in the literature study. The questions were arranged on a five-point Likert scale, with Strongly Agree (5) to Strongly Disagree (1) being the most extreme (1). The questionnaire items were determined to be trustworthy with a Cronbach's alpha of 0.98.

Data Compilation and Analysis

The data was gathered at the conclusion of the semester and analyzed using descriptive statistics. The obtained means were divided into three degrees of agreement: high (3.67 or above), moderate (2.34-3.66), and low (2.34-3.66). (2.33 or lower). The significant differences in the overall means and the means for each individual item between the two groups were analyzed using an independent-sample t-test.

Results

Table 1 shows the results of a comparison of replies from the two groups of pupils.

Table 1. *Means and Standard Deviations of the Perceptions of Undergraduate and Graduate Students Regarding Factors Affecting Online Learning Success*

| Item | | Undergraduate(n=51) | | | Graduate(n=53) | | |
|------|-----------------------------------|---------------------|------|-------|----------------|------|-------|
| | | M | S.D. | Level | M | S.D. | Level |
| 1 | Computers and the Internet skills | 4.27 | 0.63 | H | 4.25 | 0.68 | H |

| | | | | | | | |
|----|---|-------------|-------------|----------|-------------|-------------|----------|
| 2 | Listening ability* | 3.90 | 0.67 | H | 3.09 | 0.79 | M |
| 3 | Speaking ability* | 3.69 | 0.76 | H | 2.77 | 0.75 | M |
| 4 | Reading ability* | 4.02 | 0.65 | H | 3.30 | 0.82 | M |
| 5 | Writing ability* | 3.67 | 0.82 | H | 2.85 | 1.50 | M |
| 6 | Communicative ability in online classes** | 3.76 | 0.89 | H | 3.40 | 0.85 | M |
| 7 | Ability to do assignments independently | 4.25 | 0.74 | H | 4.00 | 0.95 | H |
| 8 | Ability to complete assignments within the time limit | 4.29 | 0.81 | H | 4.09 | 0.86 | H |
| 9 | Ability to priority given tasks | 4.18 | 0.93 | H | 4.11 | 0.75 | H |
| 10 | Ability to manage time to attend class** | 4.06 | 1.03 | H | 4.38 | 0.81 | H |
| 11 | Ability to stay focused* | 2.78 | 0.94 | M | 3.64 | 0.86 | M |
| 12 | Preparation for a lesson* | 2.55 | 1.10 | M | 3.11 | 1.01 | M |
| 13 | Ability to control oneself from external distraction* | 2.47 | 0.92 | M | 3.45 | 1.05 | M |
| 14 | Having motivation in learning* | 3.18 | 1.09 | M | 3.64 | 0.83 | M |
| 15 | Willingness to ask questions | 3.71 | 0.94 | H | 3.47 | 1.10 | M |
| 16 | Willingness to participate in class discussion | 3.16 | 0.83 | M | 3.26 | 0.88 | M |
| 17 | Having a purpose to learn* | 3.55 | 1.03 | M | 4.19 | 0.71 | H |
| 18 | Seeing online learning as opportunities* | 3.33 | 1.09 | M | 3.79 | 0.82 | H |
| 19 | Accepting online classes as a way of learning* | 3.73 | 1.15 | H | 4.32 | 0.78 | H |
| 20 | Having a conducive environment* | 3.20 | 1.11 | M | 3.83 | 0.98 | H |
| | | 3.59 | 0.87 | M | 3.65 | 0.89 | M |

* p < 0.01

**p < 0.05

Table 1 shows the aggregate averages and standard deviations of both undergraduate and graduate students. S.D. = 0.87, M = 3.59 (and graduate) M = 3.65, S.D. = 0.89 (students' views are moderate, and there was no statistically significant difference between the two groups in terms of overall averages and standard deviations) $p = 0.071$, $t = 0.154$).

Table 1 also shows how both groups viewed each particular item.

Individual factor means vary from 2.47) SD = 0.92(: Item 13 at the moderate level to 4.29) SD = 0.81(: Item 8 at the high level for undergraduate students.

Individual factor means vary from 2.77) SD = 0.75(: Item 3 at the moderate level to 4.38) SD = 0.81(: Item 10 at the high level for graduate students.

Even though the overall averages and standard deviations of the two groups were not statistically significant, the table demonstrates significant differences at the 0.01 level in 12 factors) Items 2-4, Items 11-14, and Items 17-20(. In addition, at the 0.05 level, two items (Item 6 and Item 10) were shown to be significant. In Item 1, Items 7-9, and Items 15-16, there was no significant difference between the two groups.

Further research revealed that although both groups rated Item 1, Items 7-10, and Item 19 at a high level and Items 11-14 and Item 16 at a moderate level, the t-test findings revealed that only Items 10-14 and Item 19 had significant differences between them.

There are six items) Items 2-6 and Item 15) that undergraduate students rated as very high, whereas graduate students rated them as moderate. On the other hand, there are three items) Items 17-18 and Item 20) that graduate students rated highly while undergraduate students rated them moderately. All of these objects, with the exception of Item

Between the two groups, 15, are drastically different.

Undergraduate students reported Items 2-6 at a considerably greater rate than graduate students. Graduate students, on the other hand, rated Items 10-14 and 17-20 much higher than undergraduates.

DISCUSSION

The studies have shown some parallels and variations in the parameters that influence undergraduate and graduate students' effectiveness in online English learning.

In terms of technological abilities, both groups considered their computer and internet expertise to be very significant. This conclusion is consistent with research described in Haron, Zaid, and Ibrahim (2015), which suggests that students' computer and Internet abilities may influence their effectiveness in an e-learning setting. Armstrong's (2011) research participants also anticipated communication technology to be utilized in ways that were familiar to them. Furthermore, Peechapol, Na Songkhla, and Luangsodsai (2018) found high agreement among the eight papers they analyzed on the impacts of online learning experience and knowledge on self-efficacy. This is comparable to a result in Ramsin and Mayall's (2019) research, which indicated that students who were better at using computers and more comfortable using the Internet were more confident in their ability to succeed in online courses. Inadequate abilities to incorporate ICTs in the classroom, however, was identified as a key impediment in a study on the importance of ICTS in teaching EFL undertaken by (Suriaman, 2018). In Cedar's (2013) research, students in the online learning group reported having inadequate computer abilities for their online learning.

However, in an earlier research, Beaudoin, Kutz, and Eden (2009) discovered that students' familiarity with technology came in last, as they reported having required technical abilities while taking online programs. Nanni and Pusey (2020) found that in many situations, pupils outperformed their professors in terms of digital capabilities.

Both groups said that their ability to do assignments independently, complete assignments within the time limit, prioritize given tasks, and manage time to attend class were very important. The results are in line with what Beaudoin, Kutz, and Eden (2009) discovered in their research. The top three most important characteristics for online learning success, according to the respondents, are self-management, ability to manage personal time, and capacity to study with minimal help. Haron claims that

Online learning, according to Zaid and Ibrahim (2015), appears to be suitable only for people who are self-disciplined, as they must complete all tasks independently.

The findings of this research may be interpreted in terms of course content and how the courses were delivered. Because both groups had classes that focused primarily on reading and writing abilities, students were routinely asked to undertake independent work on these two skills after class.

Accepting online courses as a method of learning was also judged to be highly crucial by the two groups in terms of motivation and attitude. According to Alberth (2010), pupils who have a favorable attitude toward technology are more likely to succeed because they are more driven.

However, both groups found that the ability to stay focused, prepare for a lesson, and control oneself from external distraction under the aspect of self-management skills and having motivation in learning, willingness to ask questions, and willingness to participate in class discussion under motivation and attitude were only moderately important.

This might be due to the fact that university students at both levels have adequate maturity to control themselves when it comes to adjusting to online learning (Kuama & Intharaksa, 2016).

These characteristics, in terms of desire to ask questions and engage in class discussion, are consistent with the findings of the research who found that some students felt compelled to be active in discussion, adding comments to discussion only to be seen and for marks. Because the students in the study's grades were mostly based on written assignments and term projects, they may have considered these two characteristics to be less important.

The most noticeable difference was discovered in the area of communication and language skills. The findings that undergraduate students thought the four English language skills, as well as communication ability in online classes, were more important than graduate students could be due to undergraduate students' greater concern about using English during class periods in order to get a good grade at the end of the course. Graduate students were just needed to complete the course without receiving a grade. Undergraduate students' views of willingness to ask questions under the motive and attitude element reflect these findings. One potential reason is that since Gen Zers have grown up with technology as a fundamental part of their lives, undergraduate students who are most at ease with technology and social media may be more confident in their abilities to communicate in English online. Furthermore, given that ESL students with high levels of English proficiency were more

confident than those with lower levels of English proficiency in their study, it seems worthwhile to investigate the effects of English proficiency on online communication further.

Graduate students, on the other hand, considered having a reason to study, perceiving online learning as an opportunity, and having a suitable atmosphere to be more important than undergraduate students. The researcher discovered that higher graders in their research were more ready to study online than lower grades on all 5 aspects of online readiness measures, including desire for learning.

Graduate students rated a conducive learning environment higher than undergraduate students in terms of importance to their learning performance. This is in line with the findings of the researcher.

The researcher theorized that the students either came into the course with prior knowledge of the environment or had the capacity to adjust to it.

CONCLUSION

The effectiveness of online English learning is primarily determined by students' perceptions of how it affects them and their capacity to adjust to it. As a result, it is the responsibility of instructors to guarantee that pupils are appropriately equipped for online learning success. The findings of the research are intended to help university professors better understand how university students at all levels may become successful EFL learners via online English learning and to build more effective online English courses to educate their students.

The tiny sample from a prominent metropolitan institution may not be totally typical of university students studying English online, which is a research drawback.

Furthermore, future research may need to reevaluate the grounds behind their views.

Finally, a number of things have a role in the success of online learning.

These variables should be carefully examined while building online English learning courses, since they may obstruct students' ability to learn in this new environment. Students who are not ready for online learning should also be given assistance.

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A RESEARCH PROJECT ON RESTRUCTURING FOREIGN POLICY IN A 'FROZEN' SOUTHEAST: AN ANALYSIS OF THE MOLDOVA-TRANSNISTRIA CONFLICT AS A DIRECT CONSEQUENCE OF POLITICIZED REGIONALISM OF EASTERN EUROPE'S GEO SECURITY ISSUES IN THE LIGHT OF THE TRANSNATIONAL DIMENSIONS OF A PRAGMATIC SOVEREIGN ECONOMY

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ABSTRACT

The objective of this research project is to associate national identity status quo in Moldova with the self-asserted nation state of Transnistria (Pridnestrovian state). Owing to this socio-economic status quo, the Moldovan identity has been disintegrated since the last 30 years and, in the current socio-economic scenario, it dissolves in the following five forms: firstly, the Moldovan ethnonational identity has been portrayed as a provincial variation of the Romanian ethnonational identity; secondly, precisely the Moldovan ethnonational identity has been largely based upon multiculturalism in eastern Europe; thirdly, the post-Soviet unstructured 'Non-Identity' has been a major threat to the geo-security of eastern Europe; fourthly, the explicit identities of ethnic minorities (proof of identity of the Ukrainians in Ukraine, Russians in Russia, etc.); and lastly, the marginal identities of the ostensible ethnic groups have always been highlighted. None of these ethnonational identity developmental schemes is focused towards uniting the Moldovan civil society with the nation's administration and bureaucracy. The Moldovan civil society is subject to polarization as it includes ethnic minorities making up approximately 22% of the population. Furthermore, there are evidences of the fragmentation of ethnonational identities as they split within the ostensible ethnic groups. This leads to a warlike crisis which is more multifaceted than the predicament of Romanianism versus Moldovanism. As apparent in the current socio-economic cum cultural scenario, there are at least two versions of Moldovanism: firstly, the ethicized version, and secondly, the integrative version. There are also marginalized ethnonational identities, such as the Romanian-speaking orthodox fundamentalists who oppose Moldova's integration with the European Union. On the other hand, the ethnonational identity, relating to Transnistria, is secure and united, although it comprises of ostensibly discordant characteristics that can be categorized as pre-Soviet, Soviet and post-Soviet. The ethnonational identity relating to Transnistria, is a civil identity grounded on ideology, and not on ethnicity. This ideology is also an assortment and cannot be condensed to neither 'Neo-Communism' nor 'Russian Nationalism'. Consequently, the Transnistrian ethnonational project is exposed for all post-Soviet ostensibly discordant ethnic groups. Speedy amalgamation of the two territories appears impossible owing to the fact that their respective national projects have not only dissimilar aims and objectives, but also dissimilar mechanisms. It is imperative for Moldova to first resolve on its own idea of the ethnonational project and then figure out its geopolitical strategy towards the Pridnestrovian integration and the EU membership. This research has proved that lacking such a strategy, the Moldovan conflict cannot be fixed in the predictable future.

Keywords: European Union Neighbourhood Policy; Moldova; Multiculturalism; Neo-Communism; Post-Soviet Ethnonational Identities; Pridnestrovian Integration; Russian Nationalism; Transnistria.

1. INTRODUCTION

The primary objective of this research project is to comprehend the Transnistrian conflict and its relation with the various socio-economic cum geopolitical frameworks for nation-building in the post-Soviet era. This, in turn, estimates the prospects for national reconciliation along with the renovation of regional integrity in the Republic of Moldova.

Ethnic nationalism in Moldova is an explicit result of multiculturalism in eastern Europe. It also depends on the presence of two versions of ethnonationalism as portrayed in eastern Europe: firstly, the Moldovan ethnic

nationalism owing to multiculturalism in eastern Europe; and second, the nationalism as portrayed by the Moldovan sub-ethnic groups in Romania (for more details on the Moldovan sub-ethnic groups, see King 2000).

By the end of the year of 1988, the right-bank province of Moldova had been politically, culturally, and socio-economically subjugated by the self-proclaimed 'Unionists', who were encouraging the false propagandas of a "Divided Romanian Nation" and were also challenging the reunification of Romania. On August 30th, 1989 the Supreme Soviet of Moldavia approved the Language Bill. According to the Language Bill of 1989, the Moldovan language (comprehended as regionalized Romanian) was recognized as the only state language (for a more exhaustive explanation of the linguistic status quo in Moldova in 1989, refer to Ciskei, 2017; Jaborah, 2003). In the month of February in 1990, the Supreme Soviet elections were won by the Popular Front which adapted to the unification of Moldavia with Romania. The Language Bill of 1989 and the February 1990 elections resulted in the armed conflicts in the province of Transnistria and also occasioned the development of the so-called 'Nascent Gagauz Separatism' movement in Transnistria. This was so because the Language Bill of 1989 was approved without bearing in mind the multi-ethnic and multi-lingual diaspora of the Soviet Moldavia, (for more details refer to Kolte, Adamski and Kalamu, 1991).

By the mid-1990s the recently independent self-governing nation states had to terminate their ethnonationalist developmental schemes as it was revealed that they were in fact ethnologically, culturally and linguistically diverse and heterogeneous. In the mid-1990s all such post-Soviet nation states were a witness to temporary governments that were disinclined towards producing anything to substitute the abandoned ethnonationalist developmental schemes. This was characterized as one of the most serious repercussions that could impede the process of post-Soviet nation-building. Subsequently, after a short and unstable post-Soviet era of militant ethnonationalism, the recently independent self-governing nation states turned out to be collectively known as the unstructured 'Former Soviet Union'.

2. FINDINGS OF THE RESEARCH PROJECT

2.1. Decoding the Pridnestrovian Identity

The ethnic situation in Transnistria, in accordance with the official statistics (*Statisticheskii Ezhegodnik Pridnestrovskoi Moldavskoi Respubliki*, 2010:30), looks as follows (see Table 1):

Table 1. Ethnic Composition of Transnistria

(Percentage in brackets is the author's approximate calculation)

| Population | 2018 | 2019 |
|---------------------------------------|-------------------|-------------------|
| Moldovans | 168.3 [31.9%] | 166.8 [31.9%] |
| Russians | 160.4 [30.4%] | 158.8 [30.39%] |
| Ukrainians | 151.9 [28.79%] | 150.5 [28.8%] |
| Bulgarians | 13.2 [2.5%] | 13.1 [2.5%] |
| Byelorussians | 3.7 [0.7%] | 3.6 [0.68%] |
| Gagauz | 3.7 [0.7%] | 3.6 [0.68%] |
| Germans | 2.1 [0.39%] | 2.1 [0.4%] |
| Jews | 1.1 [0.2%] | 1.0 [0.19%] |
| Others | 23.1 [4.37%] | 23.0 [4.4%] |
| Total Population (in thousands) | 527.5 | 522..5 |

Transnistria has no state language; Moldovan, Russian and Ukrainian are recognized as official languages with equal status. Statistical data on spoken languages is not available, but there is information on languages used at secondary and high schools (2010), both private and municipal (see Table 2).

Table 2. Languages Taught at Secondary and High Schools in Transnistria

| Languages | Percentages of Schools where the Languages are Taught |
|------------------------|---|
| Russian | 70.3 |
| Moldovan | 33 |
| Russian and Moldovan | 17.2 |
| Ukrainian | 8.4 |
| Romanian | 3.1 |
| Ukrainian and Romanian | 1 |

Sociological data (although obtained by state-sponsored research bodies) confirms the presence of some common meta-ethnic Transnistrian identity. In 2003, a survey conducted by *Perspektiva Centre* (Tiraspol) demonstrated that 77% of the respondents agree that the population of Transnistria may be called “*the Pridnestrovian people*”, while 23% feels that they do not belong to this category of people (Ostavnaya, 2009: 153).

2.2. Addressing the Multifaceted Predicament of Romanianism Versus Moldovanism

‘Romanians’ here do not refer to a specific ethnic group, but rather, the word also refers to Moldova nationals who wilfully consider themselves to be an integral part of the Romanian ethnic nation state. This research has found that the linguistic differences between the ‘Moldovan’ and ‘Romanian’ languages are trivial. Hence, the multifaceted predicament of Romanianism versus Moldovanism is nothing but a deliberate differentiation propaganda which is first and foremost political.

To sum up this issue in a nutshell, it has been discovered in this research project that 78% of the population residing in right-bank Moldova can be reckoned as one of the most prominent homogenous ethnic group (the Moldovans and the Romanians), and the remaining 22% can be recognized as the ‘Non-Titular Ethnic Groups’ who also reside in right-bank Moldova.

The research project has also found that the Moldovan-Romanian language is spoken (and is recognized as a primary language) by 72.2% of the overall population (some Moldovans also speak Russian); the Slavic languages namely Russian, Ukrainian and Bulgarian are spoken by 20.9% of the total population; and Gagauz which is a Turkic language is also spoken by the ‘Non-Titular Ethnic Groups’. Owing to these high percentages of ethnic and linguistic minorities, it goes without saying that the governmental strategy for a mono-ethnic and mono-lingual Moldovan nation state will undoubtedly be welcomed with contemptuous and scornful social responses. Consequently, the then transitional government of the Republic of Moldova had to abandon the Romanian project as early as 1994 (which is also acclaimed as the year when the Constitution was implemented), well before the Communists established control in the year of 2001.

The Communists won victory in the 2001 elections not because they had a strategic and impactful national project but because they were the only surviving alternative to the Unionists. Moldova joined the rest of the newly independent post-Soviet nation states that turned out to be collectively known as the unstructured ‘Former USSR’. At that point of time when eastern Europe was beholding the supremacy of post-Soviet communism, the Moldovan communist government implemented no ethno-national integration projects to research on.

The socio-economic, geopolitical and cultural status quo have radically changed in 2003-2004. Since then, not only the population but also the leadership of the newly independent, self-governing nation states have revealed that the ‘Former Soviet Union’ can no longer play its role as the unifying force and that they must stop to be former so as to develop contemporary ethnonational unification strategies.

At that point of time in post-Soviet history, ‘Coloured Revolutions’ in Ukraine and Georgia had to bear the brunt and face the challenges that opposed post-Soviet nation-building. The preliminary ethnonational initiatives were substituted with diverse projects related to the establishments of European-style nation states with an aim to join, sooner or later, the European centric democratic forums namely the EU and the NATO. In a literal sense, such Eurocentric projects were not antagonistic against Russia, because for the most part, the aforementioned governments had professed the identical objectives for integrating with the European Union (EU) and the North Atlantic Treaty Organization (NATO). Nevertheless, in reality these Eurocentric regimes would never be able to realize their objectives, because their authority, sovereignty, foreign relations, wealth, economy and trade were still grounded upon the principles and resolutions of a post-Soviet amorphous nation state. For such newly formed nation states, amalgamation and socio-economic integration with the European Union and the NATO would mean losing the ethnonational uniqueness they had and may even sometimes lead

to legal prosecution. To objectify the European and the Western inventiveness, the antagonistic groups and like-minded stakeholders in Georgia and Ukraine had to terminate the post-Soviet regimes.

2.3. Foreign Policy in a 'Frozen' Southeast: Towards Drafting Resolutions for Restructuring the European Neighbourhood Policy to Solve the Moldova-Transnistria Conflict

The post-Soviet area is now – 30 years since the collapse of the USSR – still flexible, slidable and of course, tensely. The processes of building of new statehood, transformation of political systems and social life all have their common and individual features in former Soviet Republics. Yet, though, centrifugal tendencies prevail and, as it seems, crystallization of the environment will not commence soon. And appearance of new players in the post-Soviet field: the European Union, USA, Euro Atlantic and regional international organizations, whose presence has been already showing quite actively in politics – domestic and foreign – of the new states, including Moldova that found itself in a “*buffer zone*” between the EU/USA and Russia, is partly the reason for this.

Russia's attention towards Moldova (Bessarabia – in the past) is traditional, but as for the post-Soviet times, it showed the most visibly three times, in connection with the events in Transnistria mainly: in 1992 – in order to stop hostilities; in 2003 – through the “*Kozak's Plan*” to federalize Moldova; and, finally, in 2006 – in order to overcome the “*Economic Blockade*” of this region after the introduction of the “*new customs procedures*” at the Transnistrian sector of the Moldovan-Ukrainian border.

Transnistria is one of the “*pain spots*” on the post-Soviet area. For EU, it represents threats of the “*frozen conflict*” closest to its borders. For Moldova, it means the dismembered country's impairment, for Transnistria – uncertainty of the future, and for Russia – caring for compatriots and, nowadays, for ownership.

Having arisen on the surge of the local confrontation between Moldova and its most developed region, the “*phenomenon of Transnistria*” has immediately exceeded the limits of intra-Moldovan relations, increasingly taking on the regional dimension. At that, the economic component of the “*Transnistrian Conflict*” has been ever stepping forth to the forefront.

The position of the *Centre for Strategic Studies and Reforms (CISR)* is that economic interests have been constantly underlying the “*Transnistrian Conflict*” and showing through from the very beginning. First, in the 90's, it was interests of the region as a whole, as the most well-off as regards population's incomes and the most industrially developed part of the MSSR and, consecutively, interests of the local “*Red Directors' Corps*” who initiated the creation of the “*Free Economic Zone*” (June 1990) much before TMR declared its independence. Later, after the monetary privatization with participation of both local elite and foreign investors (Russian first of all) since 2001, it was interests of the new owners and the local administration collaborating with them.

2.4. An Analysis of the Moldova-Transnistria Conflict as a Direct Consequence of Politicized Regionalism of Eastern Europe's Geo Security Issues

Transnistria-Moldova (RM-TMR) economic relations varied from “*do anything you want – trade with whoever you want*” (including legalization of the TMR's foreign trade activity through customs seals of the Republic of Moldova) to from time to time pressing of Transnistria's export-import transactions.

It is paradoxical, but it has been entry of the Republic of Moldova into WTO in 2001 that became the reference point in turning to the current confrontation of Moldova's and Transnistria's economies; and the forthcoming entry into the same organization of Russia and Ukraine – the guarantor-states and main trade partners of both Moldova and Transnistria not only served as a factor that could precipitate reaching a compromise in the Transnistrian settlement, but, on the contrary, made the situation in the region more dramatic. Three acts of this drama are already over:

2.4.1. Act I: First, in 2001, Transnistria was deprived of the right that Moldova had granted to that region in 1996 to use customs seals of the Republic of Moldova while performing export-import operations. Transnistria objected to that, citing the Moscow memorandum (signed by the RM's President as well) that specifies the region's right for foreign-economic activity.

Ukraine's reaction was noticeably late mainly due to active involvement of its economic agents in traffics in Transnistria (Ukraine's share in import of goods to Transnistria is 40% as of 2005) and it was only on May 15, 2003, when the State Customs Service of Ukraine and the Customs Department of Moldova signed the Protocol on Mutual Recognition of Shipping, Commercial and Customs Papers.

Further, in July 2003, Moldova's Government introduced procedure under which Transnistrian economic agents can execute papers necessary for export-import transactions only after registration at the State Registration Chamber of Moldova.

To prompt Transnistrian enterprises to legal traffics it was established that: they are conferred ID numbers free of charge; no customs fees are collected for declaration and customs clearance of goods during export/import, except for customs legalization of 0.18%; licenses are issued free of charge; Transnistrian economic agents bear no liability for the budget of the Republic of Moldova. In the upshot, approximately 320 enterprises of the region obtained such a registration in Chisinau during 2003; and *“Kvint”*, the leader of cognac business in the Black Sea area was the first among them.

2.4.2. Act II: During another outbreak of exacerbation in the Transnistrian zone (*“School Crisis”* – blockade of Moldovan schools situated in the region) the Moldovan Government decreed on July 30, 2004, that any economic agent may only execute export-import transactions within internationally recognized borders of Moldova in strict compliance with the national legislation and international norms and rules. The Moldovan Ministry of Foreign Affairs notified Ukrainian Government that passage of goods belonging to physical persons is suspended at 11 frontier points situated in the Transnistrian sector of the Moldovan-Ukrainian border (beginning from August 20, 2004).

At the same time, Moldova submitted a proposal for EU and OSCE to conduct an international monitoring mission in the area. The arguments were as follows:

- i. Ensuring economic security and regional stability in the Transnistrian zone, and,
- ii. Legalizing foreign trade of the region’s enterprises under international rules, norms and standards.

EU, starting from its commitments under the EU-Moldova Action Plan, decided to appoint an *“Aid Mission”* for the Moldovan-Ukrainian border, which started its activities in December, 2005.

2.4.3. Act III: The Moldovan Government issued the decree (August 2005) on regulation of traffics resulting from the Transnistrian foreign trade activity, through which the Moldovan State Registration Chamber was charged to introduce Transnistrian enterprises executing export-import transactions into the State Registry of Enterprises and Organizations (temporarily), with the right to obtain *“C”*-type certificates of origin and *“CT-1”*-type for export to Ukraine. The enterprises registered permanently can obtain *“A”*, *“CT-1”*, *“RM”* and *“EUR”*-type certificates of origin.

But more than fifteen years have passed before such a regulation was introduced into operation – since March 3, 2006, which took common statement of Moldovan and Ukrainian Prime-Ministers (December 30, 2005), a series of bilateral consultations with participation of the EU and informing business communities and the Transnistrian administration. At first, the latter recommended Transnistrian enterprises to not register in state bodies of the Republic of Moldova, perceiving it as an attempt to take them out from the Transnistrian *“Legal Area”* and financial-budgetary system.

Later on, Transnistria conducted quite an effective PR-campaign (*“Economic Blockade”*, *“Humanitarian Disaster”*, etc.), which resulted in political and economic demarches of Russia (Declarations of the State Duma and the Ministry of Foreign Affairs, the decision to grant credits and humanitarian aid, the introduction of restrictions for Moldovan export).

Now, after the four months of the *“New Customs Regime”*, the situation in the Transnistrian zone is very contradictory and is far from normalizing. On the one hand, most Transnistrian enterprises have registered at the State Registry of RM (84 – temporarily and 98 – permanently). But before that, during March-May, many enterprises (as the region’s administration recommended), including Rubnitz Steel Works, either stopped their production or just kept filling up their warehouses.

Some enterprises agreed for double taxation. Others (a group of light industry enterprises that work by contracts with partners from the EU countries) have no restrictions with regard to the import of raw materials and the export of finished products.

“Grey Schemes” of traffics were also used, fuelled by interests of administrative-economic conglomerations from Ukraine (Odessa-Illyichevsk, Vinnitsa, Kherson), Transnistria and Moldova. According to the estimates, the *“New Customs Regime”* could yield daily losses of 2 million USD – for regional budgets and economic agents of Ukraine. In fact, though, it had always been the economies of Moldova and Transnistria where the worst economic decline took place – reduction of production, export and budget revenues.

Political costs are also quite evident: the 5+2 format negotiations on the settlement of the Transnistrian conflict had been suspended; Russia and Ukraine have practically turned from mediators into participants of the conflict; implementation of the *“Yuschenko’s Plan”* (*“3 D’s”* over 18 months, yet 14 months have already passed) is being more and more put off for the future.

3. IMPLICATIONS OF THE RESEARCH PROJECT

3.1. Solving the Economic Catastrophes of the Moldova-Transnistria Conflict: Geopolitical Amalgamation of the Transnational Dimensions to Establish a Pragmatic Sovereign Economy

The situation is being aggravated by the contradictory actions of the Republic of Moldova concerning political and economic guarantees for both Transnistrian business and population (property rights, registration and taxation, relations with the budget and banking system of RM, etc.) and the region as a whole (local self-government, financial autonomy). It seems that Transnistrian authorities and population are not quite delighted for the prospect of the (much curtailed) rights and resources granted to the other “*problematic*” region – Gagauzian province, which obtained special status of “*Administrative Territorial Unit*” in 1995.

Currently, distrust and confrontation mood dominate the dialogue between Moldova and Transnistria. In the meantime, they will have to search hard for a solution sometime or another (as the key stakeholders cannot pick neighbours in the end). Besides, there are signs that the new Transnistrian business elite (and politicians derived from it) is inclined towards pragmatism and search for a compromise; in the form of the “*Union State*” model, this time, rather than autonomy or federation. According to E. Shewchuk, the new Chairman of the Supreme Council of the TMR, such a state can be created after a referendum in Transnistria, pre-term elections in Moldova and TMR under observation of the guarantor-states and international organizations, and based on the *Constitutional Agreement on the Creation of a Union State*, elaborated under the aegis of the UN special representative. The agreement stipulates for three-year term of “*Transnistrian Rapprochement*”, during which Transnistria is not invested with international legal personality and has no right to secession.

Such an approach has both supporters and opponents. Within the region, supporters are mainly the aged population who remember the advantages of living together in Soviet times, and the actively thinking students. But the most independent and motivated supporter of the conflict’s settlement – both in Moldova and Transnistria – is business community.

A new generation of proprietors and managers came to replace post-Soviet regimes and the “*Red Directors’ Corps*”. Business in Moldova and Transnistria is internationalizing quickly (investors from EU and CIS, trade partners from 80 countries) and it already feels uncomfortable within either dismembered country (Moldova), or “*Unrecognized*” nation state (TMR).

In Transnistria, besides “*Sheriff*” (born in the region and dominating its market of foodstuffs, oil products and communications plus constructions, sports business, etc.) this scheme initiated the advancement of the “*Renewal Movement*”, as well as a group of enterprises that work by contract basis with partners from the EU countries, a conglomeration of businesses collaborating with the Russian Gazprom (*Rybnitsa Steel Works*, *GRES (Cukierman)*, “*Elektromash Plant*”, *Gazprom Bank (Tiraspol)* and others) that are interested in normalization of export-import flows. Gazprom also has interests of its own that lie in the stability of its presence in Transnistria, along the way to the Balkans.

The clash of economic interests in the Transnistrian area is a new phenomenon that makes the conflict settlement even more complicated. In addition to conflicts that accumulated between economies of Moldova and Transnistria (registration, taxes, tariffs and other regulatory barriers, division of infrastructure, “*Telephone War*” and so on), there appeared obstacles along other vectors over the last year or two: Transnistria-Ukraine, Moldova-Russia, Moldova-Ukraine, Ukraine-Russia.

Actions of the friendly Ukraine can be an example: the decision of its government to cancel duty-free export of scrap metal to Transnistria (to *Rybnitsa Steel Works* controlled by Russian business); the delayed prolongation by “*Ukrinterenergo*” of an agreement with “*Inter RAO EES*” on transit of Russian electric power; Ukraine’s decision to construct a southern railway line to Izmail bypassing Transnistria and Moldova; obstacles impeding the construction of the *Moldovan Oil Terminal* on the Danube (Giurgiulesti), etc. The Russian actions – by Rospotrebnadzor (wine) and Gazprom (natural gas) that are associated with the unsettled “*Transnistrian Conflict*” are also very painful for Moldova’s economy.

My opinion is that disregard of the economic component of the “*Transnistrian Conflict*”, as it was before, will only further postpone finding the mutually acceptable political solution of the problem. Consideration of economic interests of the Republic of Moldova and Transnistria, as well as their partners during formulation and making political decisions is vitally important.

The experts from Brussels (International Crisis Group) have finally reached the same conclusion: “*A reconstruction program for Transnistria to be implemented after conclusion of a final settlement should be thoroughly thought over, and is to benefit its population, first of all. Transnistria’s inhabitants should be*

assured that they could continue their legal business operations and that the region would keep its property and a fair share of the revenues collected on its territory.". The longer the period of active confrontation will last, the bigger will be the losses for Moldova, Transnistria and their economic partners, including Russia. This should prompt both Chisinau and Tiraspol to deploy the situation.

All attempts to propose settlement plans *"from the outside"* have yielded no success yet. This is mainly due to the fact that Chisinau, at one moment, and Tiraspol, at another, did not act as independent players, but rather as accompanists in someone else's game.

Political elites are changing and it is time, at least, for Moldova and Transnistria to display sense and take up the running, beginning, first of all, with formation of working conditions for business and socio-economic guarantees for the region's population. It is also time to make up our minds as to delimitation of powers. It is clear that the decision has to include unequivocal answers about relations with Russia, the European Union and the closest neighbours within the regional cooperation framework.

3.2. What Next for the Moldova-Transnistria Conflict: Time for Unequivocal Decisions about Relations with Russia, the European Union and the Closest Neighbours within the Regional Cooperation Framework

Rapid reunification of the two banks seems impossible because their national projects have not just different contents, but different structures: multiple and incompatible identities in Moldova versus an externally firm but internally mosaic identity in Transnistria.

Mechanistic unification of these identities is impossible. Neither is each of them able to assimilate its adversary, for in the case of Moldova there is no holistic identity, while in Transnistria identity is too holistic, if not flawless. Restoration of territorial integrity of the former Soviet Moldavia depends, in my opinion, not so much on elaborated conflict resolution schemes, but on working out a version of inclusive national identity able to embrace people of all ethnic and linguistic groups living on both riversides.

Contrary to the worst suspicions of the Moldovan Unionists, the Russian Federation would hardly like to recognize the sovereignty of the PMR. On the one hand, Russia needs no second exclave (apart from the Kaliningrad region). It already spends too much on the Pridnestrovian region, allowing it not to pay for natural gas and directly supporting pensioners and the military (in 2012 the Transnistrian gas debt had reached about \$3 billion).

On the other hand, Russia's recognition of the PMR would automatically mean losing the rest of Moldova, because the unresolved situation in Transnistria prevents realization of any *"Unionist Scenario"*. Romania is not ready to incorporate the PMR with its politically active Russian-speaking population.

Having an unresolved domestic conflict, Moldova cannot become an EU/NATO member. Thus, a *"pro-Russian sovereign PMR"* would only be a seeming geopolitical advantage for Russia, not to mention that the PMR would never become a sovereign state in the full sense.

Russia still sticks to its initial plan of reconciliation: federative and neutral Moldova with representatives of the Russian-speaking minorities in its government. This project also implies transition to bi-linguicism, which is out of the question for the contemporary Unionist leaders of Moldova. Some authors (like Nantou) reject the idea of the federalization of Moldova. Others like Ciobanu are ready to live in a federal state, but not a bilingual one.

Meanwhile, in the case of reunification, predominantly Russophone minorities would make up, according to the author's rough calculations, about 28% of the population (not counting the Russophone Moldovans). Even now, with 22% of predominantly Russian-speaking minorities, Russian is much more than simply a minority language. The Moldovan elite (both extremely pro-Romanian and more moderate) understands that Moldova is currently unable to bring Transnistria back by force. Even were it possible, there are observations that Moldova is not, in fact, interested in reunification. *"The Pridnestrovian province is the brand of Moldova"*, says Irina Cagnino. *"It is not a brand, it is a disaster"*, Oahu Nantou opposes. Be it brand or disaster, an unresolved armed conflict on the territory of Moldova definitely makes it a special case among post-Soviet states, being allowed to receive humanitarian aid, grants and other benefits from the European Union. Not accidentally, the Moldovan Minister of Foreign Affairs and European Integration in March 2011 coined a phrase that *"when a baby is crying, he gets milk"*.

Another reason for the Moldovan elite not to force unification is the concern that Transnistrian clans are politically and economically much more influential, consolidated, strong and determined than Moldovan ones.

Thus, the ruling class of Moldova would rather prefer the conflict to stay frozen, or dispose of the rogue region altogether.

The Unionists will receive a much warmer welcome in Bucharest without the *“Transnistrian Tale”*. On 24th June 2010, Mihai Guimpe, then a provisional president, signed a decree introducing 28th June as a day to commemorate the 1940 *“Soviet Occupation”* of what now constitutes the right-bank Moldova. Apparently, Transnistria could not have been annexed by the Soviet Union in 1940, because at that time it was already part of the Soviet Ukraine. Guimpe’s decree, thus, may be interpreted as a tacit recognition of the PMR’s right to live independently.

Not surprisingly, Guimpe’s more moderate partners from the Alliance for European Integration, such as Marian Lupus, did not welcome the 28th June decree; the Constitutional Court declined it as illegal. Leaving the Transnistrian problem aside, the Moldovan elite should also beware that dropping Transnistria may provoke a resurgence of separatism in the Gagauz Eri (in no way do the Gagauz want to live in Romania). This policy of avoiding abrupt moves makes the Moldovan elite unable either to force reunification or to reject it formally.

For the ruling elite of Transnistria, it being a *de-facto* state guarantees economic and political power as well as a financial flow from Russia. Since it is not possible to keep the conflict frozen forever, both elites may eventually vote for the final partition and sovereignty of the PMR. Thus, the two banks prove unable to resolve the situation themselves; they need assistance (if not pressure) from external actors. Neither Russia, nor the West is interested in an independent Transnistria; together they can start a process of negotiating between the two elites.

The West seems to be an important resource for influencing Moldovan leaders, while Russia may be helpful in persuading the Transnistrians. However, I suggest that no reconciliation plan would work until Moldova finds some way out of its national identity crisis. Moldova should first define what its vision of the national project is and then build its policy towards Transnistria on these grounds.

Restoration of territorial integrity requires, first of all, an inclusive national project able to incorporate the titular ethnic groups, minorities from the Right Bank and Transnistrians into one civil nation. Third parties, be them Russia or Europe, are not able to consolidate a Moldovan nation.

4. CONCLUSION: TIME TO ESTABLISH A SOVEREIGN VERSION OF INCLUSIVE ETHNONATIONAL IDENTITY

There is a significant difference between Transnistria and right-bank Moldova, making their coexistence problematic. Transnistrians do have a formidable identity (*Transdnistrianness*, *‘Pridnestrovskost’*) – this fact is confirmed by a variety of independent observers, including such internationally recognized scholars as Pal Kolte and his collaborators (e.g., Kolstø and Malgin, 1998; Skvortsova, 2002; Troebst, 2003; Cojocaru, 2006; Deviatkov, 2010). It is built on remembering the 1992 conflict and on being ready to protect the republic in case of any intervention from the Right Bank.

It is mostly a negative identity defining a Transnistrian as someone who is *“not from the Right Bank”*. Even the rural ethnic Moldovans (most sensitive to the influence from Chisinau), according to Viacheslav Stepanova, agree that *“we are not the sort of Moldovans as those at the other bank”*. Paradoxically, this Transnistrian identity emerged and continues to exist mostly due to the policy of the Right Bank. The tougher the rhetoric of Chisinau becomes, the more garrison thinking and subsequent national consolidation in Transnistria increases.

Ilya Galinsky insists that the Pridnestrovian province emerged as a civil nation as early as in 1920s, when this region was part of Soviet Ukraine and Moldova did not yet exist. *“We lived in the sovereign independent Moldova not even one day”*, he says. At the same time, he dates the spiritual background of this nation to the end of the 18th century, when the Pridnestrovian province became part of the Russian Empire.

The official ideology is that the Transnistrians have overgrown both regional and ethnic identity and now compose a new polyethnic entity – the Pridnestrovian people (*‘Narod’*). The state-employed Transnistrian scholars emphasize that borders between ethnic groups in the Pridnestrovian province gradually disappear and that Pridnestrovian identity is being transformed from ethnic to civil (Ostavnaya, 2009:155). Stepan Beril (an ethnic Bulgarian), rector of the Pridnestrovian State University up to July 2014, writes: *“On the basis of the Russian language, the Russian culture and the Russian semantic space, the whole population of the Pridnestrovian province, consisting mostly of the Russians, the Ukrainians and the Moldovans, has united into a civil nation – the Pridnestrovian people (‘Pridnestrovskii Narod’), which has proven to be able to determine itself and to create full-fledged independent statehood.”* (Beril 2010:146).

The word 'people' (*Narod*) is commonly used instead of 'nation' (*Natsiya*) because, following the Soviet tradition, 'nation' (or 'nationality') is understood as a substitute for 'ethnicity'. The fact that Beril and other Transnistrian (as well as Russian) authors, nevertheless, sometimes use the word 'nation' (normally complemented by an adjective 'civil') should be perceived as the influence of Western political discourses. Still, '*Narod*' much better stresses the non-ethnic nature of the Transnistrian society.

Awareness of the uniqueness of the Pridnestrovian identity was present in the period of the MSSR: for example, the Pridnestrovians continued calling the right bank of the Dniester '*Bessarabia*', in spite of this term being excluded from the official vocabulary. Differences between the inhabitants of the Left Bank and the *Bessarabians* were unofficially registered by the Communist Party's policy as well. The former was considered to be more loyal to the Soviet regime.

When studying the Pridnestrovian history, many scholars have to acknowledge that self-definition of the Pridnestrovian identity and its conflict with Moldova were engendered by the existence of an identity, differentiating the Pridnestrovian population (Ostavnaya, 2009:152). Nevertheless, it would be a mistake to call the Pridnestrovian identity a remnant of the Soviet past or a neo-Communist formation. All industries of the Left Bank have been privatized and the most profitable of them became foreign property. The economy is highly monopolized by an omnipotent company's *Sheriff*.

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PROVISION AND UTILIZATION OF INFORMATION RESOURCES, SERVICES AND FACILITIES AMONG POSTGRADUATE STUDENTS IN AGRICULTURE UNIVERSITY LIBRARIES IN SOUTH WEST NIGERIA (UI, FUA, OAU)

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ABSTRACT

The study provision and utilization of information resources in Agriculture University Libraries in Nigeria; in reference to UI, FUA and OAU, the respondents are postgraduate in, Federal University of Agriculture Abeokuta, Obafemi Awolowo University Ile-ife and University Ibadan, sampled by the researcher. The main objective of the study is to study the provision of information resources and utilization in Agriculture University Libraries sampled with view to examine the types of information resources, available, extent of utilization and the constraints face by the respondents in the three selected libraries. The researcher has been taken 0.3% of the entire population of respondents=9298 = 78. Seventy eight (78) copies of the questionnaires were administered to the respondents, however, sixty three (63) of questionnaires were retrieved and analyzed from the different Agriculture University Libraries sampled representing (80.77%),. Major findings testify that the current agricultural information resources available, accessible and utilized are insufficient. The study recommended the improvement of the existing information resources, services and facilities for the user's information needs, subscriptions of offline databases such as, AGORA, HINARI, AJOL, JSTORE and E-Granary to access agricultural information offline with millions of information resources on textbooks and journals available and continue to be added in each second. There is the need for policies that facilitate inter-library loans between Agriculture University Libraries and research institute libraries, collaboration and information sharing

Keywords: Availability, Agriculture, Information sources, Digital information, University library, Utilization, postgraduate students

INTRODUCTION

This study is an appraisal on the provision and utilization of information resources in Agriculture University Libraries by postgraduate students in relation to the availability, accessibility, utilization and constraints on accessing and utilization of information resources in Agriculture University Libraries in the South West, Country. The Agriculture University Libraries were selected because of their existence. However, in those days most libraries funds from their parent institutions and other donor agencies were favorable and when librarians sought funds for provision of resources they received them without much difficulty or delay. With time, the scenario changed into a new phase as Agriculture University Libraries recorded an unprecedented increase in the costs of running capable of coping with expansion of information and high demand from the clientele which lead to the rise in costs higher than the income generation and funding by the parent body.. Therefore, the Agriculture University Libraries have to develop various techniques of appraising the information resources towards the accomplishment of the mission of the Agriculture University Libraries in the region to maintain the highest standards of excellence and realize the vision by providing access to the global base of knowledge and information around the world.

LITERATURE REVIEW**Types of Information Resources Available and Accessible in University Libraries of Agriculture**

In education, science, learning and community services, the accessibility of information resources plays a major role. The third law of Library said that "every book its reader". Knowledge resources, services and facilities must be given for successful teaching, study and leaning, and postgraduate and undergraduate students and non-academic and academic staff must have access to different types of information resources, services and facilities in their areas of specialization in Agriculture University Libraries. This will not only expand their knowledge base but also prepare them ahead of the constraints they will face in the process of learning, study and imparting knowledge. A range of activities that are undertaken by academics, non-academic personnel, research scholars and students in the process of carrying out their professional duties is hinged on close contact with the various knowledge tools and facilities in their areas of specialization

2.2.1. Forms of Information Services Available in University Libraries for Agriculture

Consequently, the study carried out by Vijayakumar (2017) opined that majority of the respondents said that newspapers, project reports, subject books, CD-ROM database and reference books are available and thesis,

general books and web resources are less available. His views were corroborated by Kwaghgba and et-al (2015), Onye (2016), Yaseen and et-al (2016), Ajiji (2017), Aladeniyi and Temitope (2018) Das and Parnab (2015), while Abubakar (2017). It stressed the e-databases subscribed to research by agricultural scientists in federal University libraries in Nigeria such as AGORA and African Journals, others include CD-ROM, MEDLINE, PubMed, Biomed Central, Online and HINARI, CAB Abstracts, BEAST CD, VET CD, and TEEAL. This finding is agreed upon by Bello and Chioma (2020) an evaluation of the extent of ICT deployment in academic libraries in Oyo State, Nigeria, on the globalization of library and information services, where they confirmed the availability of E-Granary, EBSCOHOST, JSTOR, Jaypee Digital, HINARI, AGORA and OARE with the Directory of Open Access Journals (DOAJ) and partial Institutional Repository (IR). These views were agreed upon by Rukwaro (2015) Ekene and et-al (2016) They claimed that libraries receive information materials such as books, theses, papers, magazines, encyclopedias, dictionaries, e-journals e-books, etc. But Akpe and et-al (2018) has a different opinion where he stated that information resources are not sufficient. This indicates that the views of respondents on their responses to the types of information requirements in the Library are not too different from each other. The study conducted by Afianmagbon and et-al (2020) Availability of information resources as factors that influence research productivity of academic staff at Lead City University, Nigeria, on information literacy skills, indicates high level information resources availability to lecturers and other academic staff in Lead City University who are utilizing them in conducting researches. However, Abubakar (2020) A case study of pharmaceutical science students from the University of Jos investigated the availability and accessibility of information resources in university libraries for academic use by students and revealed that books are some of the library's information resources. Journal, web libraries and internet, e-books, computers, e-journals, encyclopedia index, handbooks, newspaper and magazines are other information resources that were strongly suggested by respondents, some of the data resources were shown poor, as revealed by respondents, while more than half of the respondents recognized them. They are: audio-visual conference proceedings and abstracts and indexes for monographs and regular CD-ROM databases. However, Kutu and Olabode (2020) has a different view in his study on the availability of information resources in libraries, as he stated that the most available print information resources were newspapers, textbooks and journal collections while the least available included indexes, technical reports and manuscripts. This view was corroborated by Ilogho and et-al (2020), Swaminathan and et-al (2020) and Babarinde. and Festus (2020). In terms of accessibility, scholars have divergent views on accessing information resources. However, according to Jabbar et-al (2020), Study Accessibility and Use of Research Scholars' Institutional Repository: A Case of the COMSATS Institute of Information Technology, Lahore, they stated that users accessed Information Resources out of campus while other respondents accessed Information Resources within campus and some did so through IP and very few used other mode of access. This study is similar to that of Jan and Reman (2020) the University Students of Pakistan: A Quantitative Study of Khushal Khan Khattak University of Karak-Pakistan on Internet Usability and Accessibility, they found out that majority of the students of the Khushal Khan Khattak University Karak was accessing the Internet at their homes, hostels and the University Library. Interestingly, others were accessing the Internet at classrooms and Computers. However, Olubiyo and Yemi (2020) have different view on his study On Knowledge, Accessibility and Use of Serial Publications among Adeyemi College of Education Undergraduate Students, Ondo Library, they stated that students access serial materials by asking staff, following directional signs, browsing racks and shelves and searching periodical catalogue in that order.

The Utilization of Information Resources in Agriculture University Libraries

The library is commonly referred to as the higher education institutions' information centre. It is responsible for the acquisition and provision of information tools, services and facilities and the promotion of teaching, study and involvement in the community. In view of the above, librarians conceived the concept of educating the user of the library in locating; finding and using the data they need on their everyday activities as the library "is a growing organism"

2.3.1 The Use of Information Resources in Agriculture University Libraries

In the same vein, Oyewumi and et-al (2015) A research on Information Communication Technology (ICT) and its effect on the use of newspapers in University Libraries in Nigeria was conducted. The outcome clearly shows that most respondents used scholarly journals twice a month and on a monthly basis and used them deliberately for self-examination, learning more about a subject, assignment and coursework. The research also indicates that the participants can readily access and access academic journals. Most of them suggested that academic journals helped educate and guide them on how to conduct research and perform quality research.. The finding was agreed upon by Aba and et-al (2015) Oriogu and et-al (2015). A comparable view was that of the study carried out by students of the Federal University of Technology, Owerri, on the availability,

accessibility and usage of library information services (FUTO). The study reveals that World Wide Web (WWW), e-mail services, e-journal, e-books, e-database and DVD/CD ROMS database, textbooks and internet are the resources that students mainly utilize. They often use tools for electronic content, such as databases, electronic journals, and electronic books. cybercafés, reports, handbooks seminar/conference maps/atlas, frequently, while CeRA Journals Indiatat, CABI Abstract Horticulture Online Database, Agricultural Economics Database EBSCO Resource J-Gate Plus Fortnightly, FAO and Agricola Agricat were utilized moderately to prepare for examination, browsing the web, up-dating knowledge, in-depth research work, Up-dating and correspondence lecture notes. The majority of respondents decided to use the information tools to acquire general information and for analysis, assignment and study purposes. The discoveries were supported by Owolabi and et-al (2016), Kumar (2017), Akpe and et-al (2018), Aladeniyi and Temitope (2018) and Salubian and et-al (2018); while Madondo and et-al (2017) and Madu and et-al (2018) In their research on the use of electronic information services by undergraduate students at the Faculty of Management and Administration at the University of Africa, Mutare, Zimbabwe and on the availability and use of ICT for information retrieval by undergraduate students at the Ramat Library, University of Maiduguri, respectively, they have contrary views. They asserted that undergraduate students at Africa University typically use electronic information services inadequately. The results revealed the low level of computer usage in the library for the retrieval of information. CD ROM use was very poor and there was a low degree of internet use. Most respondents also did not use e-mail in the Library for information retrieval.

In addition, the above studies show beyond reasonable doubt that the respondents used knowledge services with serious disagreement that there is a low level of resource utilization in some African countries including Nigeria. But the degree of consumption is very high in developing countries like India. However, it is of great concern to access and use agricultural information, tools, services and facilities in the Agriculture University Libraries in Nigeria. But since then, what has happened? Any of the barriers may be discovered through current research.

The constraints associated with the use of resources in university libraries for agriculture

Abbas and et-al (2012) A research on the need for successful provision of information services and use in Nigerian University Libraries: A Case Study of Two Nigerian Premier Universities was conducted. The study revealed the range of issues involved in combating the effective implementation and use of the two university libraries' automated systems. 97 (32.3 %) of ABU respondents thought that power/electricity was the university's main automation challenge, while 40 (13.3 %) correlated the problem with the lack of relevant infrastructural facilities. The majority of ABU (9732.3 %) described power failure as the major issue, followed by system failure with power failure (8528.3 %). The finding also demonstrates the negative impact of power failure on our nation's socio-economic (inclusive education) life, where the adoption of ICT has been limited by improved access and use of knowledge tools to promote teaching, learning and study in universities. The study resembles with that of Olarongb, et-al (2013) An Evaluation of the Information Needs and Features of Oyo State Public Library Users, Nigeria Shehu and et-al (2015) On Internet Service Connectivity and Usage in Nigeria Libraries, which reported that the limitations were: intermittent power supply, lack of good seats and insufficient toilet facilities. Similarly, Eze and Uzoigwe (2013) on the place of academic libraries in Nigerian University Education, they expressed the same views on their research: contributing to 'Education for All' Ugwok and George (2015) Faculty of Business Administration, University of Nigeria, on the Knowledge Needs of Lecturers and Kumar .(2012) In Haryana, India, the use of ICT-based tools and facilities in Engineering College Libraries

Statement of the Problem

An appraisal provides the opportunity to Agriculture University Libraries to assess how well they contribute in achieving the goals of their parent organizations in the areas of provision of information resources, what the libraries have or do not, what they do, how well they do it and what they need to accomplish with evidence that the expectations of the parent body are being met. In this aspect, one of the ways for Agriculture University Libraries in the south west, Nigeria to make their contributions to the Universities and the postgraduate students is by appraising the information resources. To identify the gap in the provision of information resources and utilization

Research Objectives

1. To examine the types of Information Resources, that is available
2. To assess the extent of the accessibility of Information resources
3. To determine the extent to which information resources are utilized

4. . Identify the limitation associated with the use by library users of information tools in the Agriculture University Libraries under review.

Hypotheses

The following null hypotheses were evaluated at a significance level of 0.5.

H₀₁. No correlation exists between the availability and utilization of information resources and the research productivity of postgraduate students in the agriculture university libraries under study

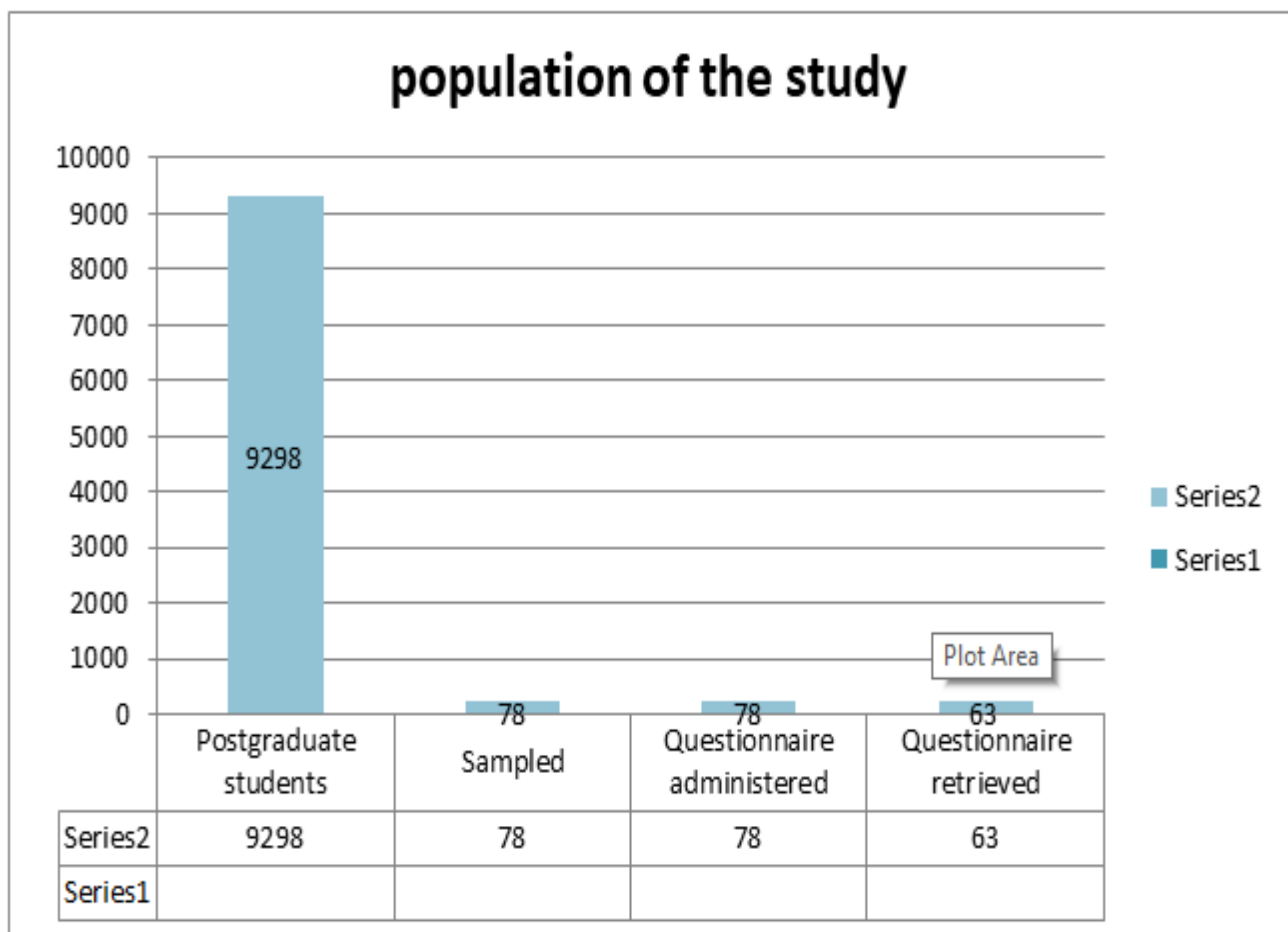
H₀₂. No correlation exists between the availability and utilization of information resources and the satisfaction level of users in the agriculture university libraries under study

Population of the Study

Table 1: Population of the respondents

| S/N | Postgraduate students | Sampled | Questionnaire administered | Questionnaire retrieved |
|-----|-----------------------|---------|----------------------------|-------------------------|
| 1 | 9298 | 78 | 78 | 63 |

Figure 1



Since the study is a mini survey to understand the Provision, Utilization and limitation in the accessing of Information Resources, Services among Postgraduate Students in Agriculture University Libraries in South West Nigeria (UI, FUAA, and OAU), the sample of 78 means around 0.8% is justifiable. However, at last only 63 questionnaires were returned with complete response.

Data Analysis

Table 2: Demographic of respondents

| Gender | Frequency | Percentage % |
|--------|-----------|--------------|
| Male | 48 | 76.19% |
| Female | 15 | 23.81% |

Figure 2

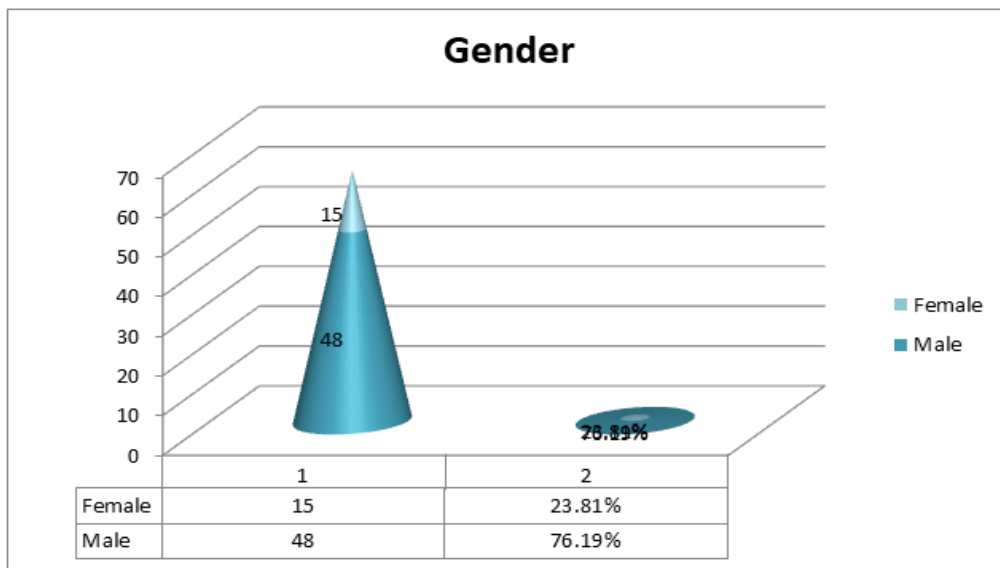
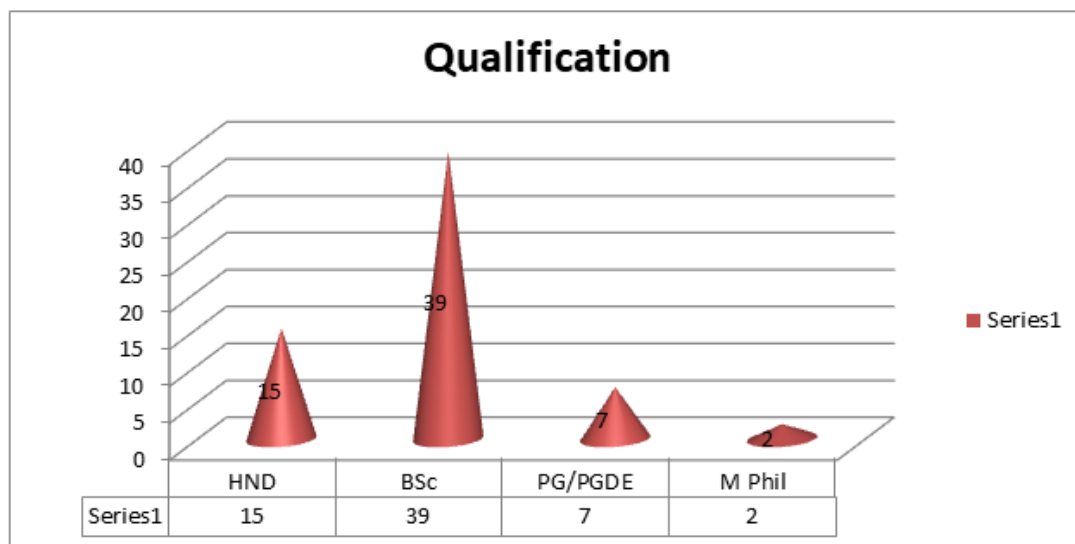


Table 2 revealed that Out of 63 respondents, about 48 (76.19%) were male while the remaining 15 (23.81%) were female. In general, it's obvious that many of the Agriculture University in South West Nigeria, we find that the male students are more comparing to that of females. There are many social phenomena for the less number of females in universities. One of the main reason is that female usually have no interest in agricultural sector. The government always encourages the female to go for higher education particularly agriculture sector o help their female counter parts by given much consideration on employment in the sector

Table 3: Highest Educational Qualification of the Respondents

| Qualification | Frequency | Percentages % |
|---------------|-----------|---------------|
| HND | 15 | 23.81% |
| BSc | 39 | 61.90% |
| PG/PGDE | 7 | 11.11% |
| M Phil | 2 | 3..17% |

Figure 3



(HND: High National Diploma, BSc: Bachelor of Science, PG/PGDE: Postgraduate Diploma/Postgraduate Diploma in Education MPhil: Master in Philosophy) Table 3 indicated that 39 (61.90%) of the respondents have recorded that BSc as their highest qualification, followed by 15 (23.81%) HND and MPhil (3.17%) have the least qualification. The table indicates that almost sixty percentages of the postgraduate students are quitting the education with school levels and after school education, going for higher studies is gradually reduced.

Availability of Information Resources in UI, FUAA, OAU

Table 4. Information resources and furniture available in the Library

| University | Information resources/furniture | | | | | | | | | | | | | | | |
|------------|---------------------------------|-------|-----------|-------------|------------------|-------|----------|-------|-------|-------------|-------|-------|----------|------------|-------|------------|
| | Print resources | | | | | | | | | E-Resources | | | | | | |
| | Jour | Books | Conf/Tech | Govt public | Thesis /projects | Magaz | N/papers | Atlas | Manus | E-Dat a | E-Bks | E-J | E-Thesis | E-N/papers | CDROM | Microfilms |
| OAU | 45000 | 5000 | 4500 | 13000 | 14000 | 2000 | 43000 | 69 | 2000 | 78 | 5000 | 3800 | 12300 | 67 | 900 | NIL |
| FUAA | 48542 | 25550 | 1271 | 348 | 17421 | 1200 | 1800 | 70 | 27381 | 67 | 237 | 15471 | 672 | 79 | 861 | NIL |
| UI | 60000 | 46000 | 34000 | 6800 | 57000 | 32000 | 23000 | 1200 | 35000 | 300 | 6000 | 17000 | 31000 | 200 | 4300 | NIL |

Sources data field 2020

In order to identify the type of information resources available in the Agriculture University Libraries studied, lists of possible library information resources were provided to the respondents to tick as many as possible. Table 4 above shows the type of information resources available, as indicated by the respondents in the Agriculture University Libraries. The study indicates that journals, textbooks, theses /dissertations/projects, newspapers, conference proceedings & technical reports, e-books, and e-thesis /dissertations/projects dominate the available information. Therefore, the Agriculture University Libraries studied have all the types of information resources in both print and non-print forms to assist their users in meeting the University Library goals and objectives of supporting teaching, learning and research

Utilization of Information Resources in UI, FUAA, OAU**Table 5 Utilization of Information Resources in Agriculture University Libraries in Western Nigeria**

| OAU | | | | | | | | | | |
|--------------------------------------|-----------|-------|------|-------|--------|-------|-----|-------|----------|-------|
| Library resources and services | Very high | | High | | Medium | | Low | | Very low | |
| frequency/% | F | % | F | % | F | % | F | % | F | % |
| Journals | 20 | 80.00 | 2 | 8.00 | 2 | 8.00 | 1 | 4.00 | 0 | 0.00 |
| Text books & Ref books | 14 | 56.00 | 2 | 8.00 | 3 | 12.00 | 4 | 16.00 | 2 | 8.00 |
| Conf proceedings & Technical reports | 7 | 28.00 | 2 | 8.00 | 7 | 28.00 | 3 | 12.00 | 3 | 12.00 |
| Government publications | 6 | 24.00 | 5 | 20.00 | 10 | 40.00 | 2 | 8.00 | 2 | 8.00 |
| Thesis /Dissertations/projects | 8 | 32.00 | 4 | 16.00 | 10 | 40.00 | 3 | 12.00 | 0 | 0.00 |
| Magazines | 6 | 24.00 | 4 | 16.00 | 15 | 60.00 | 0 | 0.00 | 0 | 0.00 |
| News papers | 9 | 36.00 | 6 | 24.00 | 8 | 32.00 | 1 | 4.00 | 1 | 4.00 |
| Atlas, Maps&Posters | 7 | 28.00 | 5 | 20.00 | 9 | 36.00 | 2 | 8.00 | 2 | 8.00 |
| Manuscripts | 7 | 28.00 | 7 | 28.00 | 6 | 24.00 | 1 | 4.00 | 3 | 12.00 |
| E-databases | 7 | 28.00 | 7 | 28.00 | 8 | 32.00 | 2 | 8.00 | 1 | 4.00 |
| E-Books | 8 | 32.00 | 5 | 20.00 | 10 | 40.00 | 2 | 8.00 | 0 | 0.00 |
| E-Journals | 11 | 44.00 | 4 | 16.00 | 7 | 28.00 | 1 | 4.00 | 1 | 4.00 |
| E-thesis/projects | 10 | 40.00 | 4 | 16.00 | 9 | 36.00 | 1 | 4.00 | 1 | 4.00 |
| E-Newspapers&E-Zines | 7 | 28.00 | 5 | 20.00 | 10 | 40.00 | 2 | 8.00 | 1 | 4.00 |
| FUAA | | | | | | | | | | |
| Postgraduates | | | | | | | | | | |
| Library resources and services | Very high | | High | | Medium | | Low | | Very low | |
| frequency/% | F | % | F | % | F | % | F | % | F | % |
| Journals | 13 | 65.00 | 2 | 10.00 | 3 | 15.00 | 1 | 5.00 | 1 | 5.00 |
| Text books & Ref books | 11 | 55.00 | 1 | 5.00 | 6 | 30.00 | 1 | 5.00 | 1 | 5.00 |
| Conf proceedings & Technical reports | 5 | 25.00 | 2 | 10.00 | 7 | 35.00 | 3 | 15.00 | 3 | 15.00 |
| Government publications | 3 | 15.00 | 4 | 20.00 | 6 | 30.00 | 5 | 25.00 | 2 | 10.00 |
| Thesis /Dissertations/projects | 6 | 30.00 | 2 | 10.00 | 4 | 20.00 | 5 | 25.00 | 3 | 15.00 |
| Magazines | 4 | 20.00 | 4 | 20.00 | 6 | 30.00 | 4 | 20.00 | 2 | 10.00 |
| News papers | 4 | 20.00 | 5 | 25.00 | 8 | 40.00 | 2 | 10.00 | 1 | 5.00 |

| | | | | | | | | | | |
|--------------------------------------|---------------|-------|------|-------|--------|-------|-----|-------|----------|-------|
| Atlas, Maps&Posters | 5 | 25.00 | 4 | 20.00 | 7 | 35.00 | 3 | 15.00 | 1 | 5.00 |
| Manuscripts | 3 | 15.00 | 4 | 20.00 | 9 | 45.00 | 4 | 20.00 | 0 | 0.00 |
| E-databases | 7 | 35.00 | 0 | 0.00 | 8 | 40.00 | 4 | 20.00 | 1 | 5.00 |
| E-Books | 8 | 40.00 | 2 | 10.00 | 5 | 25.00 | 4 | 20.00 | 1 | 5.00 |
| E-Journals | 11 | 55.00 | 0 | 0.00 | 3 | 15.00 | 3 | 15.00 | 3 | 15.00 |
| E-thesis/projects | 7 | 35.00 | 3 | 15.00 | 3 | 15.00 | 5 | 25.00 | 2 | 10.00 |
| E-Newspapers&E-Zines | 4 | 20.00 | 5 | 25.00 | 3 | 15.00 | 4 | 20.00 | 4 | 20.00 |
| UI | Postgraduates | | | | | | | | | |
| Library resources and services | Very high | | High | | Medium | | Low | | Very low | |
| frequency/% | F | % | F | % | F | % | F | % | F | % |
| Journals | 5 | 27.78 | 5 | 27.78 | 6 | 33.33 | 2 | 11.11 | 0 | 0.00 |
| Text books & Ref books | 6 | 33.33 | 4 | 22.22 | 8 | 44.44 | 0 | 0.00 | 0 | 0.00 |
| Conf proceedings & Technical reports | 6 | 33.33 | 4 | 22.22 | 2 | 11.11 | 4 | 22.22 | 2 | 11.11 |
| Government publications | 5 | 27.78 | 5 | 27.78 | 0 | 0.00 | 6 | 33.33 | 2 | 11.11 |
| Thesis /Dissertations/ projects | 5 | 27.78 | 4 | 22.22 | 7 | 38.89 | 0 | 0.00 | 2 | 11.11 |
| Magazines | 6 | 33.33 | 3 | 16.67 | 7 | 38.89 | 2 | 11.11 | 0 | 0.00 |
| News papers | 6 | 33.33 | 5 | 27.78 | 5 | 27.78 | 2 | 11.11 | 0 | 0.00 |
| Atlas, Maps&Posters | 4 | 22.22 | 4 | 22.22 | 6 | 33.33 | 2 | 11.11 | 2 | 11.11 |
| Manuscripts | 3 | 16.67 | 4 | 22.22 | 5 | 27.78 | 4 | 22.22 | 2 | 11.11 |
| E-databases | 6 | 33.33 | 2 | 11.11 | 6 | 33.33 | 4 | 22.22 | 0 | 0.00 |
| E-Books | 9 | 50.00 | 2 | 11.11 | 2 | 11.11 | 2 | 11.11 | 2 | 11.11 |
| E-Journals | 6 | 33.33 | 2 | 11.11 | 2 | 11.11 | 6 | 33.33 | 2 | 11.11 |
| E-thesis/projects | 3 | 16.67 | 3 | 16.67 | 5 | 27.78 | 6 | 33.33 | 1 | 5.56 |
| E-Newspapers&E-Zines | 3 | 16.67 | 6 | 33.33 | 5 | 27.78 | 4 | 22.22 | 0 | 0.00 |

Sources data field 2020

In order to ascertain the extent of utilization of information sources in Agriculture University Libraries studied, the respondents were provided with a list of information sources, to rank according to priority status. Table 5 above shows the information Sources rank as per priority in Agriculture University Libraries studied. Majority of the respondents ranked books, journals, e-books and e-journals very higher respectively. Government publications, atlas, maps and posters for instance are the type of library information resources ranked very lower with percentages scores

| Challenges | | | | | | | | | | | | | | | | | |
|-----------------------|-------------------------------------|---------------------------------------|---------------------------|------------------------------|----------------------------|--|---------------------------------------|---|-------------------------------------|----------------------------------|--|----------------------|--------|---|-------|---|-------|
| Lack of awareness | Inaccessibility of some information | Problems in locating appropriate info | Lack of adequate info res | Lack of current info sources | Poor internet connectivity | Lack of knowledge of search techniques | No information about the new arrivals | Lack of library space for conducive reading | Lack of enough qualified librarians | There is shortage of loan period | The numbers of books I can borrow at a time are inadequate | Erratic power supply | Others | | | | |
| % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | | | |
| postgraduate students | | | | | | | | | | | | | | | | | |
| 5 | 20.00 | 9 | 36.00 | 10 | 40.00 | 10 | 40.00 | 8 | 32.00 | 7 | 28.00 | 7 | 28.00 | 6 | 24.00 | 1 | 4.00 |
| 7 | 35.00 | 7 | 35.00 | 3 | 15.00 | 8 | 40.00 | 12 | 60.00 | 7 | 35.00 | 4 | 20.00 | 6 | 30.00 | 4 | 20.00 |
| 2 | 11.11 | 6 | 33.33 | 5 | 27.78 | 6 | 33.33 | 11 | 61.11 | 3 | 16.67 | 6 | 33.33 | 4 | 22.22 | 6 | 44.44 |

In order to define the restrictions on the usage of information resources sampled in the Agriculture University Libraries, the researcher provided a list of possible constraints facing the Libraries for the respondents to choose from. Table above indicates that Poor internet work services speed and other technical problems 75.00% and Erratic power supply (73.9) are the major constraints that hinder easy access and utilization of information resources as well as information about both print and digital new arrivals and lack of library space for conducive reading 55.56% and 52.38%

HYPOTHESES TESTED

H₀₁. No correlation exists between the availability and utilization of information resources and the research productivity of postgraduate students in the agriculture university libraries under study

Spearman's Rank Order Correlation statistic was used to test this hypothesis. The data was analyzed using SPSS and the outcome is shown in the following table:

Table 37 Relationship between the availability of information resources, services and facilities and utilisation in research productivity of students and academic staff in the Agriculture University Libraries under study

| | | Availability of IRS&F | Utilisation of IRS&F in Research Productivity |
|---|---------------------|-----------------------|---|
| Availability of IRS&F | Pearson Correlation | 1 | .807** |
| | Sig. (2-tailed) | | .000 |
| | N | 769 | 769 |
| Utilisation of IRS&F in Research Productivity | Pearson Correlation | .807** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 769 | 769 |

Correlation is significant at the level of 0.01 (2-tailed).

The relationship between the availability of information resources and the usage of research efficiency for postgraduate in the Agriculture University Libraries under review is $r = .807$, $N = 769$ and $P = .000$, according to Table 37 above. Therefore, the null hypothesis was dismissed and the alternative hypothesis accepted in the study, because the p-value (.000) is less than the alpha value (.05). The researcher concluded that there was a connection between the availability of information resources and the usage of the postgraduate students of the Agriculture University Libraries studied for research productivity. It is therefore concluded that there is a major gap between the kinds of information resources and used. There is also a need for Agriculture University Libraries to provide more resources for knowledge and consortium enhancement

FINDINGS OF THE STUDY

The following section provides the summary of the major findings of the study based on the objectives formulated in chapter 1.

Types of Information Resources those are available in Agriculture University Libraries

The finding of the study revealed that journals, text books, thesis /dissertations/projects, news papers, conf proceedings & technical reports, e-books, and e- thesis /dissertations/projects, dominate the available information resources in Agriculture University Libraries sampled, followed by tables, fans, CDROM and computers as the most available furniture and equipment available in the library. The study indicates that none of the libraries has Microfilms and Microfiche.

These findings aligned with that of Vijayakumar, (2017) who notes that newspapers, project reports, subject books, CD-ROM databases; reference books are mainly available in Libraries.

Therefore, the Agriculture University Libraries studied have all types of information resources in both print and non-print forms to assist their faculty members in meeting the University Library goals and objectives of supporting teaching, learning and research.

The provision of information resources in Agriculture University libraries context will ensure effective utilization of the library resources. Other benefits include justifying the library investment on its resources and the overall attainment of the library aims and objectives. The law said "Every Reader His or Her Book" library professionals must ensure that the library has an access policy that is appropriate ensure that adequate access to the collection was created to serve such as interlibrary loan, cooperative acquisitions, and consortia to which the library may used of easy access to the resources. Librarians must know their reader's needs to know their area of specialization to provide them with the materials they need for their research and wish to read

Accessibility of Library resources, in Agriculture University Libraries

The relevance of accessibility of Library resources was well perceived in terms of utilization of information resources in Agriculture University Libraries in Western Nigeria. The study shows that there is a significant difference in the level of utilization of the resources. In this study, although the purpose of using the library differ from university to university, however there is need to be improved for availability and accessibility of the information resources in the libraries by displaying of new arrivals, providing research guides and bibliographies to users at an information counter, newsletters, etc., as ways that a library can aggressively work to connect its resources with its users based on the fact the law said "Every Book Its Reader"

Determine the extent to which library resources are utilized in Agriculture University Libraries.

Determine the finding on the extent to which library resources are utilized in Agriculture University Libraries in Western Nigeria. The survey indicates that a good number of respondents ranked books, journals, e-books and e-journals very higher. Government publications, atlas, maps and posters for instance are the type of library information resources ranked very lower

In this context therefore, training and re-training are necessary requirement for ensuring effective and efficient utilization of information resources. In addition, the digital information resources, funding, staff productivity and capabilities through education and training opportunities in line with the objectives of the library should be improved.

RECOMMENDATIONS

An appraisal in library means assessing or judging information resources and services the utility value in terms of quality and quantity, this work has evaluated the four aspects in Agriculture University Library on accessibility, utilization. Agriculture and research have drastically changed in their concept and character due to advancement in technologies and farm mechanization. Based on the above data analysis, and interpretation, the future course of action to increase the utilization of information resources, the researcher made the following recommendations

1. It is recommended that the library resources should be available in an organized fashion and it should tailored to suit the demands of the Library users by regular shelving and shelf reading at least every two hours; better cataloguing, classification and stacking of the Library resources so that locating the information resources becomes hassle free.
2. It is recommended that the library should create an institutional repository to enlighten the services available in the digital Library, and at the same time displays the new arrival edition in the library
3. Formulate sound "collection development policy," particularly, for online information resources. The preferred information resources such as subject journals, reference books, back volumes of journals, theses/dissertation, and research reports, bibliographies and reviews need to be updated regularly.
4. Inter-library loan and document delivery services: Even though the online journals and databases are on the verge of becoming a reality, the traditional library services like inter-library loan and document delivery services still retain their identity. The study recommends to expansion of the document delivery service and inter-library loan services at the international level, so that the undergraduate students can save their time and money

CONCLUSION

This study has explored the degree at which specific information resources and services are provided to Agriculture University Libraries in Western Nigeria. The study has also found that both print and electronic information resources play essential roles in the academic pursuits of the undergraduate students of Agriculture University Libraries under study. The respondents of Agriculture University Libraries indicate that they have inadequate information resources, shortage of library staff to provide the services. There are gaps in preference of information resources and its delivery from one Library to another. The respondents face some problems in using the library resources and services. So, they need some training to be able use the resources, particularly the electronic resources appropriately

The study has attempted to understand the level of utilization of users of Agriculture University Libraries. Furthermore, the research has attempted to identify the gap between accessibility of information resources and the services of delivery. Clearly, there is a mismatch between the priorities as expressed by the respondents and the level of provision of Library resources, and services provided; regardless of their area of specialization, held consistently low level of utilization of the library resources and services. The gaps are thus significant.

The study suggests that Agriculture University Libraries in Western part of the country should maintain the needed based print and electronic resources. Well qualified and adequate staff should be recruited in the Agriculture University Libraries in the country. The important services like circulation, current awareness services, user-education/ orientation, inter library loan, Translation services/ Language laboratory service, Indexing and abstracting services, Selective and dissemination of information are to be improved.

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PULSED ELECTROMAGNETIC ENERGY TREATMENT SCOPE AND CHALLENGES

Piyush Fauzdar^{*1}, Dr. Pushpendra Yaduvanshi² and Dr. Priyanka Kawat³¹Student, ²HOD and ³Assistant Professor Department of Physiotherapy, Career Point University, Kota**ABSTRACT**

Pulsed electromagnetic field (PEMF) is effective for pain management, healing of soft tissue injury, osteoarthritis, ligament, tendons & wound healing. This technique use very high peak power output without the risk of an undesirable increase in tissue temperature. The therapeutic effects of pulsed electromagnetic energy therapy (PEMET) depend upon interactions between electric and magnetic field and biological tissue. In this paper we will try to focus on biophysics and physiological and therapeutic effects of PEMET and how it works and challenges and scope in this field.

Key words: PEMT, PEMF, BEMER, healing process, physiotherapy

INTRODUCTION:

Pulsed electromagnetic field treatment use in therapeutic purpose from last four decade [1]. Electromagnetic energy induces changes to cell environment and heals tissues within the organism. PEMF also helpful in treatment of non union and delayed fractures in USA [2]. It is useful in bone fracture healing [3-5] & reduce soreness of tissue [6,7] and regeneration of nerves [8-11]. Bio-electromagnetic energy regulation (BEMER) therapy use low frequency of flux (35-50 micro Tesla) in a biorhythmic format [12] and decrease fatigue by increasing blood flow in micro vessels which make vasculature [13].

How it works: PEMF specially BEMER-PEMF therapy improve athletic performance of athletes in recovery and decreasing fatigue Grote *et al.* [14] showed improved autonomic recovery during short term usage of PEMF after physical exercise. PEMF improve performance of sports persons and it can be measured by $VO_2\text{max}$ [15] and can be measured by various cardiopulmonary parameters [16-18]. Increase $VO_2\text{max}$ at a quicker rate that provides a competitive edge to the athlete.

Another benefit is ventilator threshold (VT) for long distance runners. It define intensity at which ventilation increases disproportionately to oxygen consumption which expressed in relation to $VO_2\text{max}$ percentage [19].

Biophysics: The oscillating electric and magnetic fields are usually pulsed to allow sufficient time for the circulation to dissipate the energy applied, thus preventing

a cumulative heating effect, This is most likely in those tissues poorly supplied with blood vessels or receiving a circulation impaired. The maximum mean output of most PEMET units is usually in the region of 40 W (compared to 400-450 W maximum output for continuous short-wave diathermy), although the pulsing regime allows a peak output that often approaches 1 KW. The facility to apply a very strong electromagnetic field without the risk of a burn enhances therapeutic processes resting membrane potential and certain cellular metabolic processes. Neurons may be depolarised directly, or as a result of neurotransmitters moving in the electromagnetic field. Blood vessels may act as conductors within the time-varying magnetic field and thus have induced within them a weak electric current. This direct effect of pulsing electromagnetic fields upon blood vessels was seen experimentally when muscle, treated with PEMET at a mean output of 40 W, showed an increase of 308 per cent in the rate of blood flow in the absence of measurable heating [20]

Physiological and Therapeutic effects:

Soft tissue injury: Hand injuries treated with PEMET within 36 hours of injury for 30 minutes twice daily (30 W mean power output) responded well with a marked reduction in swelling and some improvement in pain and disability [21].

Experiments using animal models suggest that rabbit muscle injured artificially by the injection of a toxic agent and treated subsequently for 20 minutes twice daily for eight or 16 days (38W mean power output initially rising to 143 W by the end of the experiment) was little improved by PEMET [22]. Haematoma induced experimentally in rabbits exposed subsequently to PEMET for 30 minutes twice daily (25 W mean power output) showed a statistically significant acceleration of the rate of healing after the sixth day of a nine day treatment period [23]. Arthritis induced artificially in the joints of rats by intra-articular injection of formaldehyde and treated using a Diapulse unit once prior to damage and twice on the following day (25 W mean power output) were markedly less swollen than those of the untreated control group [24].

Wound Healing: PEMET gave a fabulous result in wound healing process [25]. The healing of surgical incisions was investigated in a mixed population of patients undergoing surgery and found to be influenced favourably by PEMET treatment using Diapulse. Treatments were given twice daily (25 W mean output power) over a four day period and lasted 20 minutes [26].

Other clinical studies have shown that the amount of analgesia required by postoperative surgical patients, and subsequent length of stay in hospital, were both reduced by Diapulse treatments [27]. The paralytic ileus that often complicates abdominal surgery did not respond favourably to PEMET [28].

Nerve repair: PEMET help in the repair of both the peripheral and central nervous systems. When the median ulnar nerve of rats was sectioned surgically and treated using a Diapulse unit for 15 minutes within two hours of surgery, and then daily for 15 minutes (11 W mean power output), the treated wounds healed more quickly than those in the control group. Nerve conduction studies indicated that function was restored to normal after 45 days in treated group compared to the 60 days that elapsed before the untreated nerves recovered [29].

A most interesting observation follows from experiments with cats in which the animals suffered surgical hemisection in the upper lumbar region and were then treated using PEMET for 30 minutes daily for 30 days (50 mW.cm⁻²) [30]. After a three month postoperative interval, the spinal cords were examined histologically. Those in the treated group showed less extensive scarring and a greater number of regenerating neurons crossing the site of the lesion than control animals.

CONCLUSION:

Pulsed electromagnetic energy therapy is a widely used technique for industries and paramedical sector. It is clinically effective and growing on a fast pace. A considerable number of the existing studies have been performed with the direct or indirect sponsorship of the manufacturers of the equipment, although independent studies would increase confidence in the information available. The minimal heating effects produced by this equipment will be shown to exert only a marginal influence when compared to the direct effects of the interaction between the electromagnetic field and biological tissue. Laboratory experiments and clinical studies indicate clearly that acute lesions in soft tissues, caused by accidental trauma or surgery, can be induced to heal more rapidly by the use of PEMET. The effects upon the skin and nervous system would appear particularly useful. Chronic lesions respond less well. Pulsed electromagnetic energy therapy should be regarded as a useful therapeutic tool likely to become more effective clinically as further research identifies the conditions under which it is used most appropriately.

Further advance independent studies in this field is required so that therapy established in a more better way with more scientific proof of its usefulness and any drawbacks can be eliminated.

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DRINKING WATER INSUFFICIENCY: A CASE STUDY OF KOODALI PANCHAYAT IN KANNUR DISTRICT

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ABSTRACT

In Kerala the problem of drinking water insufficiency is a serious issue for a larger portion of the people. In many areas of Kannur District people are facing acute water shortage especially during the summer season. So the present study is an attempt to analyses the extent of drinking water scarcity in Koodali Panchayat, the alternative measures undertaken to solve the problem and the reasons for drinking water shortage. The study reveals that almost 20 Percent of the sample households surveyed face severe drinking water shortage throughout the year and even though majority of the households have their own wells, almost 60 Percent of the households have to depend on neighboring wells and others on Panchayat open well etc. as an alternative source during shortage. Therefore, a proper and well planned action programme with adequate financial support from the government and local bodies is required to reduce the problem of drinking water shortage at the panchayat level.

Keywords: Drinking water insufficiency, Panchayat, monsoon season

INTRODUCTION

Water is an indispensable resource for the existence and survival of life on earth. There can be no life without water. Water is an essential component of all living things. About three-fourths of the earth's surface is covered by water. Water is needed in almost every sphere of human activity. Water is essential for the irrigation, industries, livestock management, thermal power generation, domestic requirements, hydroelectric generation and various human activities. Water is the most fundamental and indispensable component of natural resources and is an element of life. Water is a public good and has a social and economic value in all its competing uses. Within this principle, it is vital to recognize first the basic right of all human beings to have access to clean water and sanitation at an affordable price. Recognizing water as an economic good is a key decision making tool to distribute water among different sectors of the economy and different users within sectors. It is particularly important when water supply can't be increased.

Water security is said to exist when all people of the country have access to water in sufficient quality and quantity to meet livelihood needs throughout the year, without prejudicing the needs of other users. The ever-expanding water demand of the India's growing population and economy, combined with the impacts of climate change, are already making water scarcity a major threat in many parts of the country and with it we are witnessing severe damage to livelihoods, human health and ecosystems. India has the highest water footprints among the top rice and wheat producing countries. Food security of India is closely linked to its water security.

Water scarcity is a major problem both in rural and in urban India. Scenes of long queues in front of wells or water tankers and of women making day-long trips to collect water for the day's requirements are everyday stories in many states of the country. More than 70 Percent of the rural population does not have a water source within the house; millions still travel considerable distances to collect drinking water. The situation in drought affected areas is much worse. The scarcity of water, which occurs due to inadequate rains, late arrival of rains and excessive withdrawal of groundwater, is referred to a drought.

The access to safe drinking water sources in urban areas of India was about 90 Percent in the year 1990 and 93 Percent in the year 2000 and this has improved to about 96 Percent by the year 2008. In rural India, access to safe drinking water sources has increased from about 58Percent in 1990 to about 73 Percent in the year 2008. Similarly, as per the reports of the Joint Monitoring Programme of World Health Organization and UNICEF, the use of improved sanitation coverage in rural areas of India was 7 Percent in the year 1990 and this increased to about 21 Percent in 2008. The urban sanitation coverage was 49 Percent in 1990 and increased to about 54 Percent by the year 2008. Obviously, a lot more needs to be done in this regard, especially since we aim to achieve the Millennium Development Goal (MDG) of improved sanitation facilities in the rural areas by the year 2013.

REVIEW OF LITERATURE

The survey of existing literature on drinking water scarcity has brought out a number of studies on this subject. Bhattathiripad (1999) is of the view that, in the summer time both the rural and urban population faces the

problem of drinking water scarcity. Many a drinking water distribution system fails in summer on account of lack of drinking water at source. Rudrappan (2002) in his study found that the oceans contain unlimited supply of water; fresh water for human use is fragile and finite. The demand for fresh water will continue to increase with the growth of population. Boretti and Rosa (2019) in their study on inter-linkage in between population and economic growth and water demand, resources and pollution showed that the increasing demand for water, reduction of water resources, and increasing pollution of water, driven by dramatic population and economic process and this inter-linkage is that the ultimately drive for water scarcity, and therefore the relevance of those aspects in local, rather than global, perspective. They also suggest that the scarcity of clean water by 2050 may be worse as the effects of the three drivers of water scarcity, as well as of unequal growth, accessibility and needs, are underrated. Jain (2004) found that for utilizing the water resources in a big way, inter linking of rivers could provide an answer for the water requirements of the nation. Raj et.al (2005) said that managing water supplies is one of the critical issues facing humanity and a real challenge of this country. They pointed out that, India had a pump revolution in the last four decades and farmers have drilled approximately 21 million tube wells into the saturated strata beneath their field. Every year, farmers bring another million wells into service, most of them outside the control of the state irrigation authorities. Water harvesting will avoid wastage of the precious national resource Vinya (2010) observed that water is the basis of our life and water scarcity is the biggest problem in our recent time. The important reason for water scarcity is a huge amount of water is misused from the surface of the earth. During the rainy season, a great quantity of water is wasted. Recently, a few panchayaths and Municipalities have started to take some measures to store and preserve water. She also suggested some important methods to conserve water such as construction of check dams to stop the free flow of water, rain water tanks or store houses built in the surroundings of buildings, and rain water harvesting as a good method to conserve water. Schimpf and Cude (2020) reviewed the existing United States-based water insecurity and from their review they found that 11 public health-related water insecurity interventions including surveillance practices and indicator and policy development prevail in US. From their study they also identified that opportunities to take varied approaches that are community-specific, partnership-based and culturally relevant for reducing the water insecurity in US. Anitha (2010) in her study, found that the water scarcity in summer, identified as droughts, is mainly reflected by dry rivers and lowering of water table. This will adversely affect the drinking water sector.

RESEARCH PROBLEM

Acute scarcity of drinking water has gripped most of the district in the state, and the authorities may ration in the quantity of drinking water for each household. The situation may turn worse during the peak summer months when most of the drinking water sources either dry up or are reduced to a trickle, it is feared. Kerala has not faced a drought situation of this gravity in its recent history. The failed southwest and northeast monsoons have thrust upon the state a severe shortage of drinking water. Financially sound people are depending on bore wells as the immediate solution for water scarcity problem and the number of bore wells in the state is on a phenomenal increase. This is taking the ground water exploitation levels to an all time high, thereby draining out some of our last asylum. Scarcity of drinking water has been an acute problem in many of the areas of Kerala. People of Kerala mainly depend on ground water resources for drinking water and which in turn rely on the vagaries of rainfall during the monsoon season. During the off-monsoon, water resources gets exhausted the people have to depend on alternative sources for drinking water. The present study is a humble attempt to analyses the problem of drinking water scarcity in Kannur with special reference to Koodali Panchayat by analysing the sources of drinking water, the extent of drinking water shortage, the reasons for water shortage in the area and the initiatives taken by Panchayath authorities to overcome the same .

OBJECTIVES OF THE STUDY

The main objective of the study is to analyse the drinking water insufficiency faced by the people of Koodali Panchayat of Kannur District

METHODOLOGY

The study has made use of both primary data and secondary data. The primary data required for the study are collected from a sample of 60 households from wards of the Koodali Panchayat of Kannur district which face acute problem of drinking water shortage. Convenience and accessibility were the two criteria used for selecting sample units. Direct Personal Enquiry method with a well structured questionnaire, has been used for collection of primary data. The field survey for collecting primary date has been undertaken during the months of April-May 2019.

Survey results

In order to make an in depth study on the problem of drinking water shortage in Koodali panchayat, a sample of 60 households from two wards in panchayat has been selected which face acute problem of drinking water

shortage. The majority of the households in the sample that is, 40 out of 60 of household belong to the APL category, while the remaining 30Percent that is, 20 households belong to the BPL families. The data collected through the sample survey undertaken using questionnaire and personal interview methods are presented and analysed.

Source of drinking water in Koodali Panchayat

An attempt has been made to find out the important sources of drinking water for the people in Koodali Panchayat through a sample study of sixty households. The major source of drinking water for the people in Koodali Panchayat shows that about 60 Percent of the households surveyed have own well and about 18.5 Percent of the household depend on tube well as a source of drinking water. Further, about 10.8 Percent of the households are depended on Panchayat open well and neighboring well for drinking water during periods of water shortage and the Mean and standard deviation of drinking water shows 1.6833 and 1.01667 respectively (Table 1.1).

Table 1.1 Source of Drinking Water

| Source | Frequency | Percent |
|----------------|-----------|---------|
| Own | 37 | 61.7 |
| Tube well | 11 | 18.3 |
| Neighbouring | 6 | 10.0 |
| Panchayat well | 6 | 10.0 |
| Total | 60 | 100.0 |
| Mean | 1.6833 | |
| Std. Deviation | 1.01667 | |

Source: Primary survey

Duration of water shortage

In Koodali Panchayat, a large number of people face the problem of drinking water shortage and water scarcity. During the summer season the water scarcity problem become more severe and acute. The duration of drinking water scarcity faced by households in the two wards and 18 Percent of households surveyed in Koodali Panchayat are facing acute drinking water shortage throughout the year. More than half of the households, that is , about 54 Percent face problem of drinking water shortage for a duration of 3 to 6 months a year (Figure 1.1). About 28 Percent of the households have to face the water shortage problem for duration of less than three months every year especially during the summer season.

Figure 1.2 Duration, Distance and Alternative sources



Source: Primary survey

Alternative sources of drinking water

During the water shortage period, especially during the summer season, people will have to search alternative sources of water for drinking and other purposes. As per the sample survey under taken, the major sources of drinking water during periods of water shortage are depicted in the following table the study shows that about 60 Percent depends on neighboring well for getting water during periods of shortage. About 22 Percent of the total household use Panchayat pipes and about 18 Percent depend on panchayath open well in the ward to meet the water requirements during shortage (Figure 1.1). The panchayat has providing tank water for those people who are facing acute water shortage during the summer season and will not cover all areas of the panchayat.

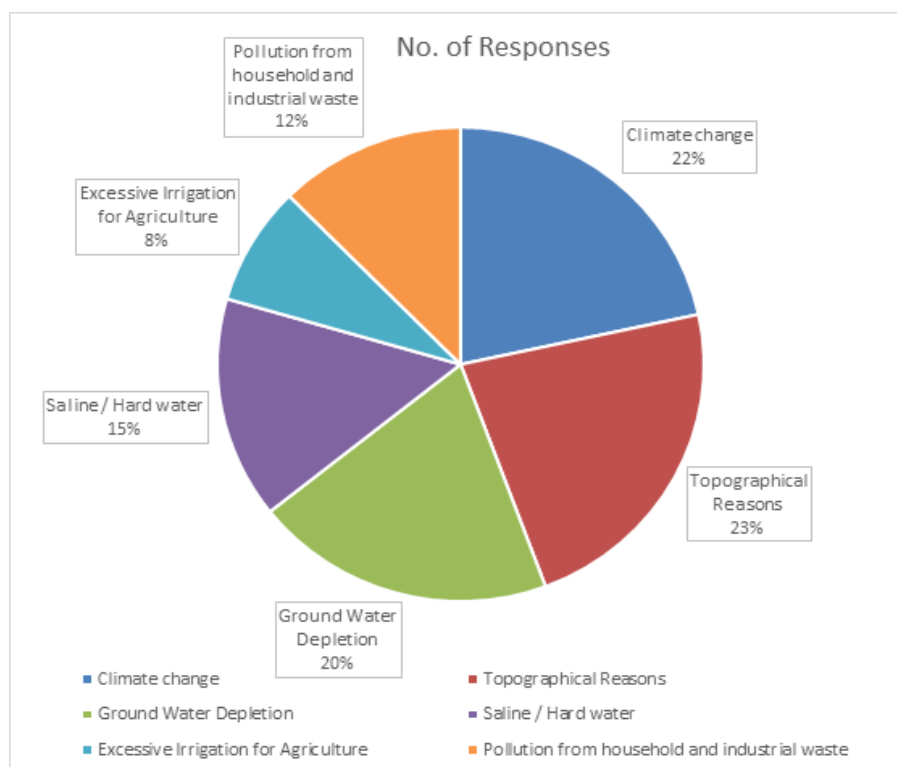
Distance to the alternative source of drinking water

During periods of water shortage people will have to depend on alternative sources like neighboring well, panchayat open well, panchayat pipes etc. Collecting water require time and effort since it is to be collected from different places. Some of the households are required to travel long distance to collect water from other sources and also they have to spent lot of time and effort getting the necessary quantity of water. About 5 Percent of the sample household surveyed will have to travel more than 200 metres every day to collect drinking water from other sources during times of water shortage (Figure 1.1). About 20 Percent of the households have to travel a distance between 100 to 200 meters and a majority of the households, that is about 75 Percent, have to depend on other sources located within 100 metres of distance for collecting the water for daily usage.

Reasons for Water Scarcity

For identifying the important reasons for drinking water shortage in Koodali Panchayat, responses have been collected from the sample households, through questionnaire. The major reasons identified on the basis of the responses from the sample households are climate changes such as vagaries in monsoon rainfall, growing atmospheric temperature; topographical reasons such as the rocky terrain surface of the area which makes it difficult for the households to construct open wells ; depletion of ground water, excessive irrigation for agricultural purposes, salinity and hard water , disposal of domestic and industrial wastes in water bodies and other public places etc. are the major reasons for drinking water shortage in the Panchayat (Figure1.2). A larger proportion of the sample households surveyed opined that climate changes, rocky surface of the area and depletion of ground water are the important reasons for the acute water shortage in that particular locality. Further, a considerable proportion opined that salinity, excessive irrigation and pollution of water due to domestic and industrial waste are also the reason for water shortage in Koodali Panchayat.

Figure 1.2 Reason for drinking water shortage



Source: Primary survey

Attitude towards Rain Water Harvesting System

Rooftop Rainwater Harvesting is one of the most commonly practiced method to store drinking water and overcome the problem of water shortage in many regions. In the present study an attempt has been made to find out the number of households having rain water harvesting facility and the attitude of the people towards the construction of the same.

Table 1.2 Attitudes towards Rainwater Storage System

| Willingness | In Numbers | In Percent |
|-------------|------------|------------|
| Willing | 19 | 32 |
| Not Willing | 41 | 68 |
| Total | 60 | 100 |

Source: Primary survey

Only two out of sixty households surveyed in Koodali Panchayat are having proper Rain water harvesting facility at their home. Further, only 28 Percent of the households are willing to construct water harvesting system if they are getting any support from the Panchayat or the Government (Table 1.2). The remaining vast majority that is about 68 Percent of the surveyed households are not considering it as a solution to their water shortage problem.

CONCLUSION

Water needs are complexly linked with the daily life and its scarcity can be an obstacle to economic growth. Water conservation is the most effective and environmentally sound method to fight global warming and climate change. It aims to improve the efficiency of use of water and reduces losses and wastage. Rainwater harvesting is the important method to reduce the water shortage. The study suggest importance of initiative that the Panchayat or Government has to take for constructing rain water harvesting facility in all the houses and to make them aware of its advantages.

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AN INVESTIGATION ON THE DIMENSIONS OF SPIRITUALITY

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ABSTRACT

Spirituality is generally observed as an essential part of one's identity and the individual's experience of the transcendent whether it is conventionally defined as god or a higher power, or universal consciousness. A preliminary study using exploratory factor analysis was conducted on 300 engineering students of Indian Institute of technology roorkee. A total of 23 items comprised of 6 dimensions have been extracted in the first phase of the study. In a new data set of 614 students a confirmatory factor analysis is used to validate the extracted factors. Convergent and discriminate validity of the model is established. All model fit indices meet the standard cutoff. Standardized regression value of all the items is statically significant ($P < 0.05$). This self-administered instrument is used by researchers and counselors to explore the attitude and experience of younger generation.

Keywords: spirituality, exploratory factor analysis, Cronbach alpha

INTRODUCTION

Spirituality is considered as a two dimensional approach (a) vertical dimension or theistic approach (b) horizontal dimension or non-theistic approach. Vertical dimension incorporating relationship and faith with God and horizontal approach incorporate existential, secular and humanistic elements (McSherry & Cash, 2004; Moberg, 2002). Various reviews, conceptual analysis (Chiu et al., 2004; Reed, 1992), qualitative research (Hungelmann et al., 1985; Fisher, 1998, cited in Gomez and Fisher, 2003) affirm that the predominant concept in the functioning of spirituality is "connectedness" (Chiu, Emblen Van Hofwegen, Sawatzky, & Meyerhof, 2004; Cook, 2004; Dyson, Cobb, & Forman, 1997). We define spirituality as "one's endeavor to connect with the ultimate truth". The operationalized definition of spiritual well-being has emerged after several meeting with the representative of various nations (National Interfaith Coalition on Aging, 1975). It comprises of the three main dimensions (a) connectedness with oneself (b) connectedness with others and nature (3) connectedness with the transcendent. Connectedness integrates with many aspects of human faculties. Connectedness with self is identified by features such as authenticity, inner harmony/ inner peace, consciousness, self-knowledge and experiencing and searching for meaning in life (Young-Eisendrath and Miller, 2000; Chiu et al., 2004; Hungelmann et al., 1985; Howden, 1992; Mahoney and Graci, 1999; Elkins et al., 1988). Connectedness with community and with nature is related to caring, compassion, gratitude and wonder. Connectedness with the transcendent encompasses connectedness with something beyond the physical, such as the universal consciousness, transcendent reality, God or a higher power. Although some reviews have stated other main themes besides connectedness, such as meaning and purpose in life, transcendence, power/energy and sacredness (Chiu et al., 2004; Hill et al., 2000; Tanyi, 2002), these dimensions are associated with one of the main dimension of connectedness. The main aim of this paper is to develop a self-administered questionnaire on spirituality for younger generation.

Objective of the study

The aim of this article is to explore the dimensions of spirituality by using exploratory factor analysis and confirmatory factor analysis.

RESEARCH METHODOLOGY

This article is framed into two parts: the first part of the article briefly described Preliminary study and second part validate the factors using confirmatory factor analysis.

Sample size

A total of one thousand questionnaires were randomly distributed among engineering students of Indian institute of technology in the academic year 2018-2019. Due to outliers, Appx. 86 questionnaires were not included in the study present study. 914 filled questionnaire were voluntary collected from the students.

Exploratory factor analysis (EFA) was conducted on 300 engineering students to confirm the precision and accuracy of the items reduction. Total 6 dimensions with 23 items were extracted by exploratory factor analysis that undergoes further analysis.

These extracted dimensions are tested on a new data set of 614 students. A confirmatory factor analysis is employed to find out the validity and model fit indices. A total of 473 (77 %) male students and 141 (23 %)

female students participated in a new data set. The age group of 416 B.tech students is between 18-21 years, 155 M.Tech students is between 22-25 years and 43 Ph.D. students is between 26-30 years. **Table 1.** Shows the demographic profile of 614 engineering students of diverse background.

Procedure and analysis

A simple random sampling was used in the current study. To conduct the smooth research, a prior permission was educed from dean student welfare of Indian Institute of technology roorkee, India. Students were asked to complete the survey questions voluntarily within 25 minutes. 5 point Likert scale (1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree) was used in the survey questions. Amos (20) version used in the study for data analysis.

Table 1: Demographic profile of respondents

| | | Frequency | % |
|------------|--------|-----------|------|
| Gender | Male | 473 | 77 |
| | Female | 141 | 23 |
| | | 614 | |
| Age | 18-21 | 416 | 67.8 |
| | 22-25 | 155 | 25.2 |
| | 26-30 | 43 | 7.0 |
| Discipline | B.tech | 416 | 67.8 |
| | M.Tech | 155 | 25.2 |
| | Ph.D. | 43 | 7.0 |

Result

Objective 1. To explore the dimensions of spirituality by using exploratory factor analysis and confirmatory factor analysis.

A brief explanation of preliminary study

Exploratory factor analysis (EFA) was conducted among 300 engineering students. An exploratory factor analysis (EFA) with extraction technique of principal component analysis (PCA) and varimax rotation was used for data reduction. Minimum recommended value of KMO is 0.50; between 0.50 to 0.70 are mediocre; between 0.70 to 0.80 are good; between 0.80 to 0.90 are great and above 0.90 are superb (Hutcheson & Sofroniou, 1999). The value of Kaiser-Meyer-Olkin was .782 and Barlett test of sphericity was chi-square=2289.230, $p=.000$. All the factors whose Eigen value is greater than 1 are extracted (Kaiser, 1974; Gorsuch, 1983; Russell, 2002; Heppner, Lee, Wang & Park, 2006). Average variance extraction of six dimensions were 61.002%. The ideal acceptable limit is 60% (Scherer et.al., 1988).

All the values whose factor loading was greater than 0.60 accepted in the current study. One rule of thumb is that factor loading $<.40$ are weak and factor loading greater than $>.60$ are strong (Garson, 2010). Reliability was measured using Cronbach alpha (α) coefficients for all constructs, and all values were found to exceed 0.6 (The minimum accepted value of cronbach alpha is 0.60 to 0.70 (Bryman & Cramer, 2005; Hair et. al., 2006; Pallant, 2007; Santos, 1999). It is also relevant to mention that cronbach's alpha value of 0.60 is also accepted in case of exploratory research (Bagozzi & Yi, 1988). The overall internal reliability of the self-administered scale is 0.782 and for sub-dimension is 0.842 to .660. Factor loading and cronbach alpha is presented in **table 2.**

Table 2. Results of Reliability and Factor Analysis of spirituality framework

| construct | items | Factor analysis (PCA) | Cronbach Alpha α |
|-------------------------|--|-----------------------|-------------------------|
| Universal consciousness | Uc1: I look to higher supreme consciousness for strength, support and guidance. | .803 | .842 |
| | Uc2: There is a higher plane of consciousness or spirituality that binds all people. | .743 | |
| | Uc3: I find inner strength and peace from my prayer or meditation. | .723 | |
| | Uc4: I feel presence of higher supermen's consciousness | .694 | |

| | | | |
|-----------------------|--|------|------|
| | Uc5: I pray to god | .677 | |
| | Uc6: My faith in higher power/universal intelligence helps me to cope during challenges in my life. | .650 | |
| | Uc7: I have had spiritual experience that cannot be expressed in words. | .626 | |
| Reverence | Ro1: I respect the diversity of people. | .810 | .738 |
| | Ro2: I believe that nature should be respected. | .723 | |
| | Ro3: I listen both side of the story. | .686 | |
| | Ro4: I believe that all living creatures deserve respect. | .645 | |
| Self-love | So1: I feel I can improve myself. | .654 | .725 |
| | So2: I love myself | .751 | |
| | So3: I hope for the best. | .735 | |
| | So4: I take good care of myself. | .668 | |
| Forgiveness to others | F1: I continue to be hard on others who have hurt me. | .887 | .790 |
| | F2: If others mistreat me, I continue to think badly of them. | .811 | |
| | F3: I continue to punish a person who has done something that I think is wrong. | .756 | |
| Compassion | Co1: People whom I really admire are one who has sacrificed everything for the sake of society upliftment. | .686 | .660 |
| | Co2: I feel a deep sense of responsibility for reducing pain and suffering in the world. | .795 | |
| | Co3: I try to make a meaningful contribution to society. | .611 | |
| Gratitude | G1: I am grateful for what I have. | .839 | .790 |
| | G2: I have so much in life to be thankful for. | .838 | |

Author's own finding

Confirmatory factor analysis

Confirmatory factor analysis (CFA) is a statistical technique used to verify the factor structure of a set of observed variables. A total of 23 items with 6 dimensions are extracted by exploratory factor analysis that undergoes further analysis. These items were tested on a new data set. Confirmatory factor analysis (CFA) generated three main results in the scale development study: (1) Standardized regression result of the entire extracted dimension (2) Convergent and Discriminant validity of the proposed model (3) Model fit Indices.

(1) Regression weight: Table 3. Shows the standardized regression weight of the entire extracted items is found to be significant ($P < 0.05$).

Table 3. Regression weight of all the extracted items

| | | | Estimate | S.E. | C.R. | P | Label |
|------|------|-----------|----------|------|-------|-----|-------|
| SI36 | <--- | universal | 1.000 | | | | |
| SI47 | <--- | universal | .974 | .063 | 15.41 | *** | sig |
| SI37 | <--- | universal | 1.091 | .069 | 15.82 | *** | sig |
| SI10 | <--- | universal | 1.092 | .068 | 16.04 | *** | sig |
| SI39 | <--- | universal | 1.050 | .065 | 16.13 | *** | sig |
| SI42 | <--- | universal | 1.011 | .063 | 16.06 | *** | sig |
| SI12 | <--- | universal | 1.141 | .069 | 16.52 | *** | sig |
| SI44 | <--- | reverence | 1.000 | | | | |
| SI48 | <--- | reverence | .717 | .053 | 13.55 | *** | sig |
| SI45 | <--- | reverence | 1.063 | .054 | 19.51 | *** | sig |
| SI46 | <--- | reverance | .956 | .054 | 17.85 | *** | sig |
| SI4 | <--- | self | 1.000 | | | | |
| SI3 | <--- | self | .781 | .053 | 14.64 | *** | sig |
| SI2 | <--- | self | .859 | .071 | 12.19 | *** | sig |
| SI1 | <--- | self | .921 | .065 | 14.08 | *** | sig |
| SI52 | <--- | forgive | 1.000 | | | | |
| SI53 | <--- | forgive | .839 | .044 | 19.14 | *** | sig |

| | | | Estimate | S.E. | C.R. | P | Label |
|------|------|-----------|----------|------|-------|-----|-------|
| SI51 | <--- | forgive | .903 | .043 | 20.77 | *** | sig |
| SI34 | <--- | compas | 1.000 | | | | |
| SI18 | <--- | compas | .731 | .061 | 11.89 | *** | sig |
| SI35 | <--- | compas | 1.122 | .078 | 14.42 | *** | sig |
| SI14 | <--- | gratitude | 1.000 | | | | |
| SI13 | <--- | gratitude | 1.099 | .085 | 12.93 | *** | sig |

Author's own finding

(2) Validation of the model

Table 4. Convergent validity was evaluated by Average Variance Extraction (AVE) and composite reliability (CR). If AVE is less than 0.5, but composite reliability is higher than 0.6, the convergent validity of the construct is still adequate (Fornell and Larcker, 1981). In the present study, Composite reliability of constructs ranged from 0.751 to 0.885. AVE ranging from 0.510 to 0.661, satisfy the above mentioned criteria by C.Fornell and D.F.Larker, (1981) i.e. $CR > AVE$. The value of all standardized factor loadings (λ) must be significant and exceed 0.50 and is significant at $p < 0.01$.

Table 5. Discriminant validity persist when the extracted construct do not intersect with each other in their meaning and are dissimilar from each other. The result of discriminant validity measures individual variable's AVE, within factor shared variance which is greater than the squared correlation coefficients between variables (Bagozzi, Yi, & Phillips, 1991; Bhattacharjee & Premkumar, 2004; Wixom & Todd, 2005). Current study satisfied the conditions for discriminant validity as all AVE values are above squared correlation coefficients.

Table 4. Value of factor loading, Average variance extracted and composite reliability

| construct | Standardized factor loading (λ) | Average variance extracted (AVE) | composite reliability (CR) |
|-----------|---|----------------------------------|----------------------------|
| Uc1 | .760 | .525 | .885 |
| Uc2 | .736 | | |
| Uc3 | .739 | | |
| Uc4 | .734 | | |
| Uc5 | .723 | | |
| Uc6 | .701 | | |
| Uc7 | .675 | | |
| Re1 | .757 | .548 | .827 |
| Re2 | .851 | | |
| Re3 | .578 | | |
| Re4 | .750 | | |
| SL1 | .699 | .510 | .806 |
| SL2 | .751 | | |
| SL3 | .735 | | |
| SL4 | .668 | | |
| F1 | .884 | .661 | .854 |
| F2 | .736 | | |
| F3 | .813 | | |
| Co1 | .686 | .503 | .751 |
| Co2 | .795 | | |
| Co3 | .638 | | |
| G1 | .816 | .616 | .762 |
| G2 | .753 | | |

Author's own finding; Universal consciousness (Uc), Reverance (Re), Self-love (SL), Forgive (F), Compassion (Co), Gratitude (G)

Table 5. Results of Discriminant Validity

| | | 1 | 2 | 3 | 4 | 5 | 6 |
|---|-------------------------|------|---|---|---|---|---|
| 1 | Universal consciousness | .724 | | | | | |

| | | | | | | | |
|---|-------------|------|-------|-------|-------|------|------|
| 2 | Reverence | .245 | .740 | | | | |
| 3 | Self-love | .217 | .348 | .714 | | | |
| 4 | Forgiveness | .008 | -.226 | -.104 | .813 | | |
| 5 | Compassion | .422 | .502 | .288 | -.085 | .709 | |
| 6 | Gratitude | .265 | .373 | .435 | -.148 | .308 | .784 |

Author's own finding

Discussion

(3) Model fit indices

Table 6. Present the results of goodness of fit indices. To measure the model fit, various fit indices such as goodness-of-fit index per degree of freedom (CMIN/df<5), goodness-of-fit index (GFI<.9), incremental fit index (IFI<.9), comparative fit index (CFI<.9), root-mean-square error of approximation (RMSEA<.08), were used (Hooper et al., 2008; Schreiber et al., 2006). All the indicators of model fit are accepted for "Exploration of spirituality framework; youth perspective"

Table 6. Goodness-of-fit Indices

| Fit Index | Score | Accepted cutoff | |
|---------------------------------------|------------------|-----------------|--|
| Absolute fit measure | | | |
| Minimum fit function | 598.5 (p = 0.00) | | |
| Chi-square χ^2 | 214 | | |
| Degree of freedom (df) χ^2/df | 2.79** | < 3 | (Kline, 2015) |
| Goodness -of-fit Index (GFI) | 0.921** | > 0.80 | (Hair, Black, Babin, Anderson, & Tatham, 2006) |
| Root mean square residual (RMSEA) | 0.054** | < 0.08 | (Hair et.al., 2010) |
| Incremental fit measures | | | |
| Adjusted goodness of fit index (AGFI) | 0.898** | > 0.80 | (Marsh, Balla, & McDonald, 1988) |
| Tucker-Lewis index (TLI/NNFI) | 0.924** | > 0.90 | (Bentler & Bonett, 1980) |
| Normal fit Index (NFI) | 0.904** | > 0.90 | (Hair et. al., 2006) |
| incremental fit index (IFI) | 0.934 | >.090 | (Hooper et. al., 2008) |
| Comparative fit Index (CFI) | 0.935** | > 0.90 | (Bentler, 1990) |

**Accepted values

The present study is conducted to develop a validating tool on spirituality for Younger generation. This section briefly explains all the extracted dimensions of spirituality and similar findings that female student's spirituality is more than male students. universal consciousness, reverence, self-love, forgiveness to others, compassion, gratitude

Limitation and future scope

The number of students included in the current study was limited to one premier engineering institution and hence, generalization of the study was difficult to coherent. The study only focused on the students whose intelligent quotient is assumed high as comparison to other students with the same age bracket. Most of the Indian students with hindu origin participated in the present study. Further, research can be explored with increasing the heterogeneous population of the engineering students in both public and private

CONCLUSION

Engineering Students are the wealth and future of our nation. It is essential that they must have high spiritual intelligence so that they can have a well-adjusted and stable life. Spiritual experiences of both religious and non-religious youth can be measured with our multidimensional questionnaire. The study recognizes that spirituality play a vital role in the life of youth. It is evident that Spiritually Intelligent Youth can challenge stressful situations with Optimistic viewpoint. The effective execution of the spiritual programs is an essential criterion of Indian institute of technology roorkee, a premier institution imparting technical education in India. Spiritual practices help in regulating the undesirable thoughts which create bewilderment in the mind in other words, it improves the quality of thoughts in the mind. Therefore, there is a need to understand the functioning

of mind, the process to control it and make it subservient. A person who thrives in regulating the mind and creating a state of inner silence gets access to sat-chit-ananda, the field of universal truth, contentment, wisdom and bliss.

Conflict of interest

Author has no conflict of interest.

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THE EFFECTIVENESS OF E-LEARNING AMONG SCHOOL STUDENTS IN THRISSUR DISTRICT

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ABSTRACT

The COVID-19 pandemic has become the global health issue which has its impact on all spheres of our life. Education sector is the most affected one due to the wide spread of COVID-19 pandemic. All schools and colleges across the world were forced to closed down. As a result, the face of education system has changed. From the traditional methods of teaching and learning, it has been converted into online mode of teaching and learning which is known as E-learning/ Online learning. E-learning enables students to attend their classes and thereby to acquire knowledge even by sitting in their home by overcoming all geographical barriers. Software professional has developed many apps and software to support E- learning. Students as well as teachers have faced a lot of issues (including health issues, mental issues, technical issues, financial issues, etc.) during the online mode of teaching and learning. School students as compared to college students has faced many difficulties. It is mainly because, school students are not at all acquainted with the technical aspects of E-learning. School students need to be continuously monitored by the parents and teachers to ensure the effectiveness of their study which may not be possible always. Mental health as well as physical health of students have suffered too much due to E- learning. Many students do not have access to the digital devices that support E- learning. Many students are facing network issues. In the context of this continuing system of E-learning, it is indeed to measure the effectiveness of E- learning. The current study attempts to measure the effectiveness of E- learning among school students.

Keywords: COVID-19 pandemic, E-learning, School students, Health issues

INTRODUCTION:

COVID- 19 pandemic has changed the face of education system. As social distancing is important to control the spread of corona virus, in order to avoid social gatherings, educational institutions were forced to closed down. The traditional educational methods were replaced by E- learning.

A learning system based on formalised teaching but with the help of electronic resources is known as E-learning. While teaching can be out of the classrooms, the use of computers and the internet forms the major component of E- learning. E- learning can also be termed as a network enabled transfer of skills and knowledge, and the delivery of education is made to large number of recipients at the same or different times. E-learning enables students to attend their classes and thereby to acquire knowledge even by sitting in their home by overcoming all geographical barriers. At the same time, students as well as teachers have faced a lot of issues during the online mode of teaching and learning (i.e., E-learning). It is necessary to ensure that E- learning is effective for the students, then only a well-educated generation can be built for the better future of our nation.

STATEMENT OF THE PROBLEM:

During the COVID-19 pandemic situation, the number of students using e-learning has increased significantly. Students and teachers are now depending on e-learning as a part of their curriculum. The traditional classes are now replaced by online classes. Students who are scattered at different geographical areas can attend their classes even by sitting in their home. Due to the popularity of E- learning, India has witnessed the nationwide application of technology in education sector. Many apps and software are used for this purpose. It provides video telephony and online chat services through a cloud-based peer-to-peer software platform and is used for teleconferencing, telecommuting, distance education, and social relations. Examples are Google meet, zoom app, Webex, etc. In this scenario, it is essential to study the effectiveness of E- learning among school students for its effective implementation and the follow up and also to study whether the students are satisfied or dissatisfied with this method of learning. This study is about to measure the effectiveness of e-learning among school students in Thrissur district.

OBJECTIVES OF THE STUDY:

1. To understand the level of satisfaction among school students towards e-learning.
2. To examine various factors influencing satisfaction of students with e-learning.

3. To analyse the problems faced by school students while learning online.

RESEARCH METHODOLOGY:

Research Design:

Descriptive research design is followed for conducting the study.

Source of Data:

Both primary and secondary sources have been used for the study.

Secondary Data:

Secondary data has been collected from books, repots, thesis, journals, websites etc.

Primary Data:

Primary data has been collected using questionnaire.

Population of study:

The population of the study covers school students in Thrissur district within the age group of 10- 17 years.

Sampling design:

The method of sampling design is convenient sampling. Sample size is 60.

Tools for data collection:

Questionnaire.

Statistical tools used:

Simple percentage analysis and Likert scale

LIMITATIONS OF THE STUDY:

1. This study is limited to samples of students taken from Thrissur district.
2. In this study we are only considering students from Upper Primary, High School and Higher Secondary.
3. Accuracy is based upon on the respondent's response.

DATA ANALYSIS AND INTERPRETATION:

Table 1: E-devices used by the students

| E- devices | Number of students | Percentage of students |
|------------------|--------------------|------------------------|
| Smart phone | 47 | 78.3 |
| Desktop computer | 6 | 10 |
| Laptop | 5 | 8.3 |
| Cable T V | 18 | 30 |

78.3 percentage of students are using smart phone for E-learning and only 8.3 percentage of students are using Laptop for E-learning.

Table 2: Average time students spend daily for online class

| Average time spend | Number of students | Percentage of students |
|--------------------|--------------------|------------------------|
| Less than 2 Hours | 21 | 35 |
| 2-3 Hours | 27 | 45 |
| 3-4 Hours | 6 | 10 |
| More than 4 Hours | 6 | 10 |
| Total | 60 | 100 |

45 percentage of students daily spend 2-3 hours for their online class and only 10 percentage of them spend more than 4 hours.

Table 3: Online platform used by the students

| Online platform | Number of students | Percentage of students |
|-----------------|--------------------|------------------------|
| Google meet | 49 | 81.7 |
| Zoom App | 12 | 20 |
| Whatsapp | 27 | 45 |
| Youtube | 16 | 26.7 |
| Victors channel | 24 | 40 |

| | | |
|-------------|---|-----|
| Gotomeeting | 0 | 0 |
| Webinar | 1 | 1.7 |
| Webex | 0 | 0 |
| Telegram | 1 | 1.7 |

81.7 percentage of students use Google meet as online platform for e- learning and none of the students use Gotomeeting and Webex.

Table 4: Frequency of which students are evaluated in the course of their online classes

| Frequency | Number of students | Percentage of students |
|------------|--------------------|------------------------|
| Never | 14 | 23.3 |
| Rarely | 6 | 10 |
| Sometimes | 29 | 48.3 |
| Very often | 6 | 10 |
| Always | 5 | 8.3 |
| Total | 60 | 100 |

48.3 percentage of students are sometimes evaluated in the course of their online class and only 8.3 percentage students are always evaluated in the course of their online class.

Table 5: Whether the students can manage their study time effectively and easily complete assignments on time

| Particulars | Number of students | Percentage of students |
|-------------------|--------------------|------------------------|
| Strongly disagree | 8 | 13.3 |
| Disagree | 2 | 3.3 |
| Neutral | 22 | 36.7 |
| Agree | 23 | 38.3 |
| Strongly agree | 5 | 8.3 |
| Total | 60 | 100 |

38.3 percentage of students agree that they are able to manage their study time effectively and they can easily complete their assignments on time. Whereas 3.3 percentage of students disagree with it.

Table 6: How helpful are teachers while studying online

| Particulars | Number of students | Percentage of students |
|--------------------|--------------------|------------------------|
| Not at all helpful | 10 | 16.7 |
| Slightly helpful | 2 | 3.3 |
| Moderately helpful | 9 | 15 |
| Very helpful | 28 | 46.7 |
| Extremely helpful | 11 | 18.3 |
| Total | 60 | 100 |

46.7 percentage of students say that, teachers are very helpful while studying online. For 3.3 percentage students, teachers are slightly helpful while studying online.

Table 7: Satisfaction of students towards e-learning

| Satisfaction | Number of students | Percentage of students |
|---------------------|--------------------|------------------------|
| Highly dissatisfied | 10 | 16.7 |
| Dissatisfied | 6 | 10 |
| Neutral | 23 | 38.3 |
| Satisfied | 18 | 30 |
| Highly satisfied | 3 | 5 |
| Total | 60 | 100 |

38.3 percentage of students are neither satisfied nor dissatisfied with their e-learning programme. Only 5 percentage of them are highly satisfied with it.

Table 8: Effectiveness of e-learning

| Effectiveness | Number of students | Percentage of students |
|----------------------|--------------------|------------------------|
| Not at all effective | 15 | 25 |
| Slightly effective | 9 | 15 |
| Moderately effective | 20 | 33.3 |
| Very effective | 13 | 21.7 |
| Extremely effective | 3 | 5 |
| Total | 60 | 100 |

33.3 percentage of students say that e-learning is moderately effective for them. But, 5 percentage of them say it is extremely effective.

Table 9: Factors that positively influence the effectiveness of e-learning programme

| Factors | Number of students | Percentage of students |
|--------------------------------------|--------------------|------------------------|
| Cost effective | 14 | 23.33 |
| No need for travelling | 22 | 36.7 |
| Increased knowledge about technology | 17 | 28.3 |
| Effective use of time | 10 | 16.7 |
| No other disturbances | 12 | 20 |
| Promotes self- study | 14 | 23.3 |
| Quick delivery of lessons | 5 | 8.3 |
| Can access recorded content any time | 8 | 13.3 |

36.7 percentage of students opined that most important factor that makes e-learning effective is they don't need to travel for attending the online class whereas 8.3 percentage of them opined that quick delivery of lessons is the most influencing factor that makes e-learning effective.

Table 10: Factors that hinders the effectiveness of e-learning programme

| Factors | Number of students | Percentage of students |
|----------------------------------|--------------------|------------------------|
| Lack of face to face interaction | 27 | 45 |
| Technical problems | 33 | 55 |
| Lack of concentration | 15 | 25 |
| Disturbances at home | 11 | 18.3 |
| Stress | 18 | 30 |
| Lack of electronic device | 10 | 16.7 |

55 percentage of students are having technical problems which hinders the effectiveness of their e-learning programme. For 16.7 percentage of students, lack of electronic devices is the factor that hinders the effectiveness of e-learning programme.

Table 11: Major problems that students face while learning online

| Problems | Number of students | Percentage of students |
|-----------------------|--------------------|------------------------|
| Physical problems | 15 | 25 |
| Connectivity problems | 28 | 46.7 |
| Mental stress | 18 | 30 |
| Lack of freedom | 5 | 8.3 |
| Boredom | 15 | 25 |
| others | 16 | 26.7 |

The major problem that 46.7 percentage students face is the connectivity problems while learning online. For 8.3 percentage students, lack of freedom is their problem.

FINDINGS:

1. Majority of the students use smartphone for e-learning.
2. Majority of the students spend 2-3 hours for their online class. Very few students are spending more than 4 hours for it.

3. Google meet is the most widely used online platform for e- learning by the school students.
4. Nearly, half of the students agree that their performance is sometimes evaluated by the teachers in the course of online classes.
5. Most of the students are able to manage their study time effectively and they can easily complete their assignments on time.
6. The teachers are very helpful for the students while studying online.
7. Only few students are highly satisfied with their e-learning.
8. About 33.3% of the students opined that e-learning is moderately effective. Very few students opined that it is extremely effective.
9. The most important factor that positively influences the effectiveness of e-learning among the students is, they don't need to travel for attending the class.
10. E- learning helped the students to increase their technical knowledge.
11. For some students, e-learning promoted self-study.
12. Most of the students face technical problems, which is the main factor that hinders the effectiveness of their e-learning.
13. Nearly half of students face connectivity problems during their online studies.
14. Students suffers many physical problems and mental stress too.

CONCLUSION:

COVID- 19 pandemic has significant impact on education sector of India. Education sector was forced to replace its traditional method of teaching by the online teaching methods. It created many challenges to the teachers as well as to the students. The present study is an attempt to analyse the effectiveness of e- learning among school students in Thrissur district. From the study it is found that, e- learning is extremely effective only for few students. Majority of the students are neither satisfied nor dissatisfied with e- learning. No need for traveling is the main attractive factor for the students which make them satisfied with e- learning. Students face technical issues, connectivity problems, physical problems and mental stress during their e- learning.

SUGGESTIONS:

1. To reduce network and connectivity problems, students are recommended to port to a service provider who provides better connection in that locality.
2. In order to reduce stress, students can engage in household works, yoga, meditation, etc.
3. A system must be adopted to evaluate the students during their classes like conducting quizzes or asking questions randomly.
4. A system to redress student's grievances should be maintained properly and feedback from students should be collected periodically.

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STUDY ON MOVEMENT PATTERNS IN AN EDUCATIONAL INSTITUTE USING SPACE SYNTAX

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ABSTRACT

In architecture, the spatial formations are a result of transformation of the ideas into reality. Architects provides a solution to a given design problem by testing various alternatives to obtain the desired spatial relationships to which the overall knowledge of architecture helps the architect to understand the intricate relation of built and open space. This knowledge is a synthesis of practise and theory and architects must proceed in both ways and bring creativity in all components and its integration. This paper aims to explore the contribution of Space Syntax in the design process. This paper showcases the use of space syntax and its measures and methods to perform studies in architecture and urban design for the improvement in the campus of an educational Institute. Space syntax is used to derive the correlation between the morphological properties of the college road network and observed movement patterns of the students. Placements of canteens with context to hostels and departments and of hostels to departments and its resultant movement patterns have been studied.

Keywords: urban sustainability, Manali, hill town, urban problems

6. INTRODUCTION

Space syntax is a human-focused and science-based approach used to investigate the spatial relationships with a range of economic, social and environmental aspects. A major virtue of this approach is that it is supported by a powerful social theory of space. Founded in the 1970s and 1980s by Bill Hillier and his colleagues (Hillier and Hanson 1984; Hillier et al. 1987), and developed further in the following decades, space syntax theory describes the logic of society through its manifestation in spatial systems: how the way spaces are put together – or the configuration of space – relates directly with how people perceive, move through and use spatial systems of any kind, ranging from small domestic spaces to large-scale cities (Penn, 1998). These phenomena include patterns of movement, space awareness and its interaction, density, land use, land value, urban growth and social diversity and safety.

Built on quantitative analysis and geospatial computer technology, space syntax provides a set of theories and methods for the analysis of spatial configurations of all kinds and at all scales. (Stonor, 2011). Space Syntax research demonstrate that the spatial layout of building directly affects Carbon emissions, Land value, Safety, Land use and Movement of persons around the building.

7. LITERATURE ON SPACE SYNAX

The Graph Theory is the basis of space syntax. The basis for graph theory in architecture is similar to that in mathematics, architects developed several methods for mapping nodes and edges to various spatial and formal features (Michael J Dawes, 2013). These maps can be interpreted through a combination of mathematical analysis and observations of social structure, building types, and human behavior. A common linguistic for the same was drawn upon, the study of the arrangement of space is defined as, “space syntax”. The term is justified because the “grammar” of architecture is the set of rules that govern form generation, and thus, the pattern of arrangement of spaces could be rightly thought of as the “syntax” of architecture. Graph theory broadly is the study of graphs namely Undirected Graph, Directed Graph and Weighted Graph.

2.1 Space Syntax Software

Various fields of study have developed specific spatial analysis software to suit their needs, including TransCAD among transportation researchers, GIS among planners and geographers, Axman among Space Syntax researchers, and various plugins for other software platforms (Chenghu Zhou, 2018). For space syntax, there are a large number of spatial network analysis software available on the market and online. Some of the widely used software for space syntax related research are UCL Depthmap, Axman, Axwomen, Mindwalk, and Spatial.

For this study, UCL DepthmapX, version 0.3 has been used. DepthmapX was developed by Alasdair Turner of UCL.

2.2 Analysis Methodology of Space Snytax

The general idea is to break down the space into components, analyzes as network of choices and then to represent the resultant as maps and graphs to describe the relative connectivity and integration of those spaces. It rests on three basic conceptions of space:

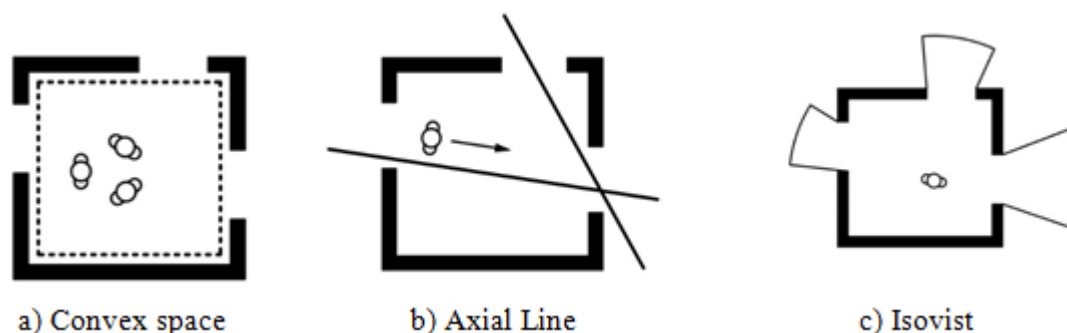


Figure 1: Three basic conceptions of space (Source: Dawes, Michael J.; Ostwald, Michael J. (2013))

2.2.1 Convex space

It is psychologically self-contained unit of space where every point of the perimeter is visible from every point within (Michael J. Ostwald M. J., 2018). It provides a localized perspective as any selected point within a convex space is visible and directly accessible to every other point in the same space. It is used to discuss the interaction as well as arrangement of spaces. Architectural interiors are the most common subjects of convex space analysis, as these environments tend to contain defined two-dimensional spaces, as opposed to the urban scale (Michael J. Ostwald M. J., 2018).

2.2.2 Axial line

An axial map is a set of fewest and longest lines that can see everything and get everywhere. An axial line is a straight line of movement and/or sight (Michael J. Ostwald M. J., 2018). Axial distance signifies the change in direction. Axial lines are used when studying movement. It provides the most globalizing perspective and is ideally suited to the analysis of urban environments where long, straight, movement-oriented, streets dominate the spatial structure. The axial map is the primary representation of this type of analysis; its node and edge are rarely depicted. However, when drawn, the graph for axial analysis is different from the graph drawn for a convex map for the same spaces. Analyzing an urban scale environment is highly complex as it yields hundreds of axial lines, hence the primary form of analysis for this is mathematical.

2.2.3 Isovist

Isovist is the set of all points visible from a single vantage point in space concerning an environment. (Benedikt, 1979). • Isovist Field is a regular grid is superimposed on an environment plan and an isovist is generated at the center of each grid square, showing the measures of each isovist on a scalar field. (Michael J. Ostwald M. J., 2018). Visibility graph analysis abstracts the environment into a series of polygons representing the space visible from a series of defined observation locations. These polygons are called isovists. It gives us the Visibility Graph Analysis in the end. Visibility graph analysis is less reliant on the shape of spaces than either convex space or axial line analyses, and potentially provides useful insights into the analysis of both architectural interiors and urban environments. Spaces that are more or less central and hence can be used to predict rates of spatial occupation and social encounters etc. According to Michael J. Ostwald M. J., 2018, the major strength of the visibility graph method is its stability and repeatability as an analytical procedure; however, this stability does not eliminate flexibility from the method. There are two sources of flexibility: 1) Altering the height of the isovist plane and 2) Altering the size of the grid used to locate isovist observation points.

2.3 Accessibility Measure

It has further division as Connectivity, Depth, Control Value and Integration

2.3.1 Connectivity

It refers to the number of modifying the height of the isovist plane and modifying the size of the grid used to locate isovist observation points.

2.3.2 Depth

It is defined as the smallest number of syntactic steps that are needed to reach one space from another (Dettlaff, 2014). Depth is counted in a graph and is determined by parameter k. Parameter connectivity considers immediate neighbors and depth considers the neighbors of the k-th degree. (Dettlaff, 2014)

2.3.3 Control Value

It measures the degree to which a given space controls access to all immediate neighbours of the axis line. It takes into account all the alternative connections which these neighbours have (Dettlaff, 2014). This is a

dynamic local measure. Control is defined as “the degree of choice that each space represents for its immediate neighbors as a space to move to” (Hillier et al., 1983: 237) (Mohammed, 2010). It is reciprocal to the connectivity of its neighbors.

2.3.4 Integration

Integration or accessibility is a variable that explains connections of a space with other neighboring spaces in its surroundings. It is the key parameter leading to the understanding of the relationship of an urban space. It is of two types Global and Local.

2.3.5 Intelligibility

Intelligibility is related to the ability of a space to give clues to the understanding of the whole system. Hillier (2007) develops a metric for intelligibility by correlating a local measure of spatial configuration with a global measure. It was found that the degree of intelligibility can be predicted by drawing scatter grams. If the points form a straight line rising at 45 degrees from bottom left to top right, then this implies a good correlation between local and global integration. Consequently, the system would be highly intelligible (Hillier, 2007).

2.3.6 Synergy value

Synergy is the correlation between local and global integrations. Radius 3 is not as local as connectivity, but it is the best correlate of pedestrian movement rates. Its correlation with the global integration measure is, therefore, perhaps an indication of the relationship between the local economy of neighborhoods and the whole city economy (Mohammed, 2010).

8. ABOUT THE STUDY AREA

The National Institute of Technology Hamirpur (abbreviated as NITH) is a technical university located in Hamirpur, Himachal Pradesh, India. It geographically lies between 31042'54''N 76031'E to 31041'53''N 76032'E. The study area is in seismic zone-IV.

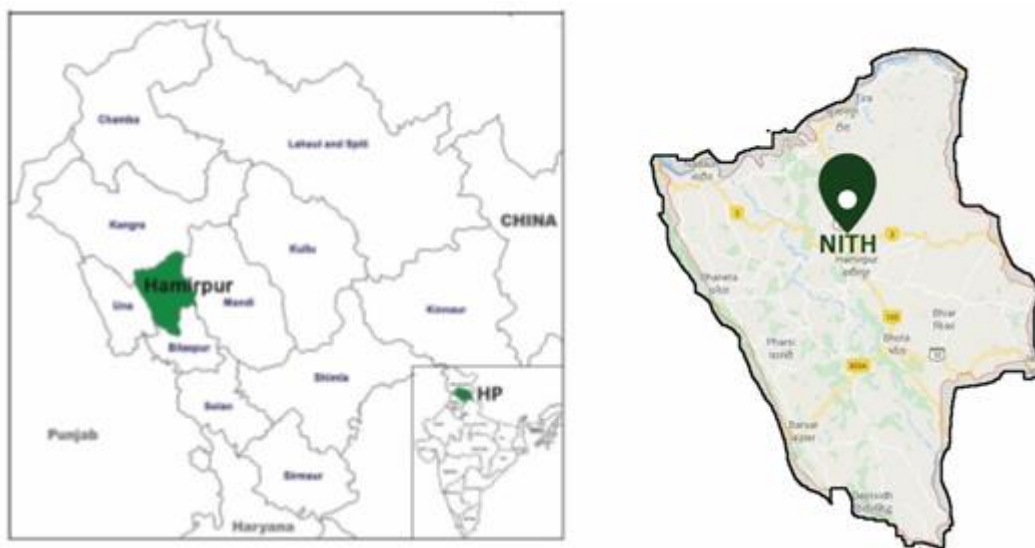


Figure 2: Location of Hamirpur district in the state and the location of Institute in Hamirpur

Hamirpur has a sub-tropical climate with an average annual rainfall of 140 centimeters and an elevation of 738 meters above mean sea level. The town is situated in lower Himalayas and hence, is hilly terrain. The climate of Hamirpur is quite pleasing and tolerable, other than the occasional extremity of temperature in summer and winters. The temperature is average throughout the year, except in months of December, January, May, and June where it ranges between 12-30°C.

The campus has three gates; gate no. 1 is the main gate for the premises, while the other two gates at the rear are near the hostels. A national highway runs across the campus into two unequal parts. The larger part of campus constitutes of the academic, administrative, and hostel building while the land on the other side of the NH, the smaller one constitutes of faculty buildings and water treatment plants. All the academic and administrative blocks are closely knit together at the top north of the site, the boys' hostels are located at the west while the girls' hostels are located on both east and west. The campus is in close vicinity to the Hamirpur market and bus stand.

Figure 3: Site Plan of educational Institute



9. DATA ANALYSIS

4.1 Pedestrian Analysis

Movement within the campus for students is primarily walking. A few students use cycle, but 97% of students walk to the destination. In a campus as humongous as NIT Hamirpur, where the chief source of movement is walking, convenience and approachability are important. Other than vehicular roads the pedestrian map is inclusive of all, pavements, shortcuts, stairways, and other routes that aren't accessible by a four-wheeler. By using space syntax we can study how the location of the built mass in the campus impacts the convenience of the students daily. The pedestrian map of the campus is composed of 226 axial lines represented from red to blue in terms of their degrees of integration, connectivity and depth.

Figure 4: Axial Map showing connectivity of pedestrian movement



4.1.1 Connectivity

The roads at Gate 1 and Gate 2 are very well connected and are branch out to several focal locations of the college. The road at Gate 1 is the primary entrance of NITH and hence, rightly well connected. Its initial connectivity is with the Shiv temple, staff quarters on both sides of the road and, Ambika and Parvati Girls Hostels. Further, it leads to other parts of the college. Gate 2 is the campus' secondary road and is at the backside of the college. Its surrounded by student hostels; the road there, which is highlighted in red leads to the Dhauladhar Boys Hostel, Manimahesh Girls Hostel, Aravalli Hostel, and Kailash Boys hostel. The NH crossing above the campus is expectedly not well connected, it currently lies out of the college boundary and is the entry point for Gate 2 and 3.

4.1.2 Global Integration

For the integration values, the red lines mean the most integrated (have the fewest changes of direction from others on average); the blue ones mean the most segregated. The hierarchy of global integration on the campus is ideal as per the functions of the areas. The staff quarters area and water treatment plant are the least integrated followed by the hostels being averagely integrated. The core area of the college consisting of the academic and

administrative buildings is the most well integrated with the rest of the campus. The NH on the outskirts of the college is poorly integrated with college.

4.1.3 Local Integration (R3)

Local integration can give us a deeper insight into the several connectivity issues such as hostel-department, department-canteens, canteen-hostel, etc.

Hostel-Department

- Ambika Girls Hostel and Parvati Girls Hostel are well integrated into the area with departments. However, because space syntax takes into account the number of turns of connectivity of the roads, the metric distance between the areas goes unaccounted for. In simple words, the route from girls' hostel to their department is rather convenient to approach, but the physical distance is large.
 - Dhauladhar, Manimahesh, and Aravalli Hostel are also fairly well integrated into the departmental area. The metric distance is also comparatively convenient.
 - Neelkanth is comparatively less integrated than the above but is more than Himgiri and Himadri Boys Hostels.
 - Kailash boys Hostel lies right in the vicinity of the academic area and is the closest.
- ##### Department-Canteens
- There are total of 7 canteens/food joints on the campus. Juice bar, Nescafe, DBH Nescafe, Amul, Verka, HPMC, Food plaza, and 4H.
 - Of these 7 canteens, Nescafe, Amul, Verka, HPMC and 4H fall in the zone of the academic buildings and are hence in close integration.
 - Juice Bar, DBH Nescafe, Food plaza, and 4H are not closely integrated with the academic /departmental area.
 - Canteen-Hostel
 - The juice bar is near Ambika Girls Hostel and Parvati Girls Hostel; hence closely integrated.
 - DBH Nescafe is near Dhauladhar Boys Hostel, Manimahesh Girls Hostel, Aravalli Hostel, and Neelkant Boys Hostel. The axial map shows close integration for Dhauladhar Boys Hostel, Manimahesh Girls Hostel, and Aravalli Hostel. Neelkant Boys Hostel shows lesser integration with the same.
 - Food Plaza is closely integrated with Himgiri and Himadri Boys Hostel, and 4H is closely integrated with Kailash Boys Hostel as demonstrated with the Local Integration Map.

4.1.4 Depth

The academic and administrative areas are placed the deepest in the campus, while the hostels and staff quarters are on the outer areas.

4.1.5 Intelligibility

The correlation between Connectivity and Global Integration for pedestrian movement in terms of R^2 is 0.16227. The scatter gram is very diffused and non-linear, depicting the value to be very low. It could interpret that spatial configuration may cause tourists or outsiders in moderate incident of lostness. (Hillier B. B., 1987)

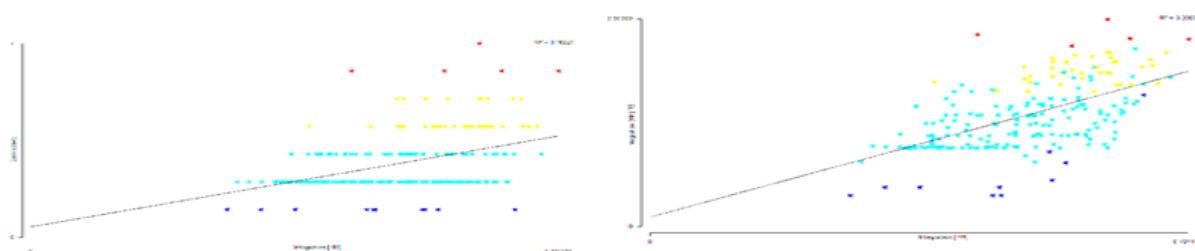


Figure 5: Scattergram of Pedestrian Intelligibility & Synergy

4.1.6 Synergy

The correlation between Global Integration and Local Integration for pedestrian movement in terms of R^2 is 0.338809. Synergy coefficient shows potential of integrated overall urban network to travel through ($R^2=0.34$) due to presence of more than one way to reach a destination.

4.2 Vehicular Analysis

The same roads are used by different sections of the college differently. Students do not use vehicular modes for transportation. Vehicle are used only by faculty and guests of the college. Other than that college buses and service vehicles also use the roads. The map consists of all the basic roads that run along the campus. Thus, this could simply explain that an outsider/visitor may feel confused or lost in the campus as a whole but for a student residing in the campus for a considerable duration, it may feel easy to travel due to various choice of routes.

The vehicular map of the campus is composed of 135 axial lines represented from red to blue in terms of their degrees of integration, connectivity and depth.



Figure 6: Axial Map showing connectivity of vehicular movement

4.2.1 Connectivity

The road running along the departments is the most well connected. It is used regularly by vehicles.

4.2.2 Global Integration

For the integration values, the red lines means the most integrated (have the fewest changes of direction from others on average); the blue ones mean the most segregated (least integrated).

- The road running behind the departments, colored in yellow is the longest patch of most integrated road in the map. It has the fewest number of turn and is used immensely by vehicles.

4.2.3 Local Integration

The route near the OAT and Guest house, Dhauladhar Boys hostel and Gate 2, Gate 1, and the one near the Ambika and Parvati Girls Hostel is well integrated.

4.2.4 Depth

The vehicular roads that run to the administrative building and departmental blocks is at the deepest end of the campus

4.2.5 Intelligibility

The correlation between Connectivity and Global Integration for vehicular movement in terms of R^2 is 0.0544668. This value is very low hence the campus plan is very unintelligible.

4.2.6 Synergy

The correlation between Global Integration and Local integration for vehicular movement in terms of R^2 is 0.0763383.

10. CONCLUSION

The campus of NIT Hamirpur is located on hilly terrain and hence faces setbacks due to the same when laying the road network of the campus. This impacts the intelligibility and synergy of the area. Although the intelligibility in both the map is very low, the value further reduces by half when the pedestrian routes are removed.

In an intelligible world, the correlation between local and global properties of space is perfect, so the whole can be read from the part. Hence intelligibility will be directly proportional to synergy. Synergy too reduces when

the pedestrian routes are removed, dipping the value from a 0.338809 in the pedestrian axial map to 0.0763383 in the vehicular axial map.

Table 1 Comparison of Intelligibility and Synergy

| ATTRIBUTE→/ MAP ↓ | INTELLIGIBILITY VALUE(R ²) | SYNERGY VALUE(R ²) |
|---------------------|--|--------------------------------|
| PEDESTRIAN MOVEMENT | 0.16227 | 0.338809 |
| VEHICULAR MOVEMENT | 0.0544668 | 0.0763383 |

Naturally, as the no of routes reduces in the vehicular axial map so does the average connectivity.

Table 2 Comparison of the configurational values of Connectivity

| ATTRIBUTE→ | CONNECTIVITY | | |
|---------------------|--------------|---------|---------|
| MAP ↓ | MINIMUM | AVERAGE | MAXIMUM |
| PEDESTRIAN MOVEMENT | 1 | 4 | 7 |
| VEHICULAR MOVEMENT | 1 | 3 | 5 |

The Global Integration remains the same in both the axial maps as we are counting how deep or shallow each line is from all other lines.

Table 3 Comparison of the configurational values of Global Integration

| ATTRIBUTE→ | GLOBAL INTEGRATION | | |
|---------------------|--------------------|---------|---------|
| MAP ↓ | MINIMUM | AVERAGE | MAXIMUM |
| PEDESTRIAN MOVEMENT | 0.268 | 0.483 | 0.697 |
| VEHICULAR MOVEMENT | 0.268 | 0.483 | 0.697 |

In Local integration R3 however, the average reduces as we are counting how deep or shallow each line is from all lines up to three levels.

Table 4 Comparison of the configurational values of Local Integration

| ATTRIBUTE→ | LOCAL INTEGRATION | | |
|---------------------|-------------------|---------|---------|
| MAP ↓ | MINIMUM | AVERAGE | MAXIMUM |
| PEDESTRIAN MOVEMENT | 0.333 | 1.187 | 2.04 |
| VEHICULAR MOVEMENT | 0.333 | 0.558 | 0.782 |

There is a drastic impact in values of depth when comparing both the axial maps; depth reduces significantly in the vehicular axial map, again due to the reduction of axial lines.

Table 5 Comparison of the configurational of Depth

| ATTRIBUTE→ | DEPTH | | |
|---------------------|---------|---------|---------|
| MAP ↓ | MINIMUM | AVERAGE | MAXIMUM |
| PEDESTRIAN MOVEMENT | 8.375 | 14.101 | 19.827 |
| VEHICULAR MOVEMENT | 1 | 9.29 | 17.57 |

The study shows that the circulation patterns pedestrian as well as vehicular not only can be expressed through Space Syntax but also can be improved for its connectivity.

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EXPLORING THE SOCIAL INNOVATION FACTOR OF THE ART-CREATION IN PAINTING ENTERPRISES

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ABSTRACT

This research explores the elements of social innovation for art-creation in painting enterprises from the service innovation point of view. This research is mainly to explore how to integrate the concepts of service innovation in the business model with specific advantages of the company, using painting as its service content; how consumers evaluate their experience value during the service process, and achieve social innovation under the service. This research uses multiple case study method to design interviews with two non-profit corporate entities that served art-creation in painting, in which the research shows painting is the content of the service model, and not only meet the emotional needs of consumers through its operations, but also develop innovations in their business model to solve social issues. The research show that from the perspective on social innovation, as a potentiality in healing industry, the enterprises of art-creation in painting can not only find the suitable solutions to the existing social phenomenon of emotional stress, but also combine the characteristics of efficiency and sustainability to continually create and deliver social value. This research brings the viewpoint of art into service science, and combines creative and innovative thinking with business operations under social innovation point of view. The outcome offers a practical implication for the business structure of enhancing social value under the development of creative industries. In conclusion, the popularity and its easy accessibility reinforce the use of art-creation in painting to carry out internal expression channels, which can be social innovation model with great potential for development.

Key Words: social innovation; art-creation; painting; service innovation; social value

1. INTRODUCTION

In this era, the pursuit of efficiency in all kinds of things makes the life of the social community more compact. The level of stress on a daily basis in modern society is also getting higher, and furthermore, stress is the key factor that causes emotions. How to deal with emotions and be able to heal ones emotions has become an unavoidable important topic for everyone in this modern society. In other words, in recent years, there has been a wave of business models that focusing on "healing" socially and economically. The purpose is to solve the social phenomenon of emotional soothing through business models, and through the creation of various new healing economies. The healing benefits generated by art-creation in painting have brought about great market development and formed a brand new service innovation viewpoint. Industries based on art-creation in painting, such as the popular brand "Paint and Sip", promoting stress relaxation in the market. The healing that art-creation in painting brings does not lie in the quality of the work nor the beauty or ugliness, but in the process of experience. It is the process to feel the state of oneself in a nonverbal way.

The emergence of social innovation is to solve a certain phenomenon of the enterprises in the society or social organizations. The types of these social enterprises are also diversified due to their value propositions. The system of the society in which the enterprise is located and the government's implementation of the policies can also cause differences amount these enterprises. Currently, the enterprises that provide healing services by art-creation in painting in Taiwan are lack of clear and standardized evaluation indicators in categories, and also lack of core values and resource integration for company's long-term operation are the main issues needed to be considered. However, from the perspective on social innovation, as a potentiality in healing industry, the enterprises of art-creation in painting can not only find the suitable solutions to the existing social phenomenon of emotional stress, but also combine the characteristics of effectiveness, efficiency, and sustainability to continually create and deliver social value. (Phills, Deiglmeier, & Miller, 2008).

This research is expected to explore the elements of social innovation through the companies that serve art-creation in painting from the service innovation point of view. By designing case interviews with corporate entities, the research shows how art-creation in painting is the content of the service model, and how to not only meet the emotional needs of consumers through its operations, but also develop innovations in their business model to solve social issues. It also allows the organization to provide a positive social influence for the general public. The use of art-creation in painting carry out internal expression that is a social service innovation model with great potential for development.

Therefore, the purpose of this study is as follows:

1. Explore the relationship and connotation of social innovation for specific advantages of art-creation in painting enterprises.
2. Construct a social service innovation model for art-creation in painting enterprises.

2. THEORETICAL BACKGROUND

Art itself has the characteristics of diversity, tolerance, and creativity. From ancient times to the present, the high degree of human acceptance of art has also made it possible to become sustainable (McQuilten & White, 2015). The Art Council England believes that "art and culture can be widely used to exert its lasting influence", and it is even more convinced that art will shape people's values and behaviors in the future. The British Association of Arts & Business proposed that art and business have begun to emphasize the value reciprocity of professional exchanges. Recent research shows that art is highly involved in the commercial market as a classic and current topic (Baumgarth & Wieker, 2020). With the changing concept of the times, art has not only become an important part of life aesthetics in the daily life of the public, but the commercial functions that art brings to the public have begun to be widely used, and even the social functions conferred by art have gradually been received. How to solve social problems more effectively so that art has more powerful value and development possibilities is the a topic that needed to pay attention with.

Based on the argument of social enterprise, a more inclusive concept of "social Innovation" has been developed. The focus will no longer be limited to the enterprise itself, but expand its concept into innovative products or services that solve social problems through the business model. The difference between social innovation and social enterprise is that social enterprise is a single attribute that uses commercial power to perform social missions; while social innovation is the creation of society through the cooperation of technology, resources, and communities (Mulyaningsih, Yudoko, & Rudito, 2016). Strengthen the integration of related resources to establish a complete social innovation ecosystem. In other words, social innovation is a long-term value co-creation process that benefits the social system (Voorberg, Bekkers, & Tummers, 2014).

What social innovation creates is a new type of social influence, which uses innovative methods to change the attitude, cognition and behavior of actors related to social issues and the social context associated with it. So as to develop a more profound and long-term social impact, therefore, social innovation will no longer be limited to the products or services of enterprises, but the social influence and social value generated therein. Thus, its value will not only benefit from a single individual or organization but the entire social system.

The social innovation of art in the market is a relatively new concept. Its point of view is to develop innovative business models to solve social issues using art-creation as the core, and at the same time, the organization can create not just economic value but obtain profit to achieve a sustainable business model. Art-creation enterprises are part of the social innovation of art and culture, and they use the process of art-creation as a medium for enterprises to provide service processes. Through the freedom of art, consumers' participation can be improved, and self-emotional mediation can also be achieved in the process. In a broad sense, it has specific social benefit value (McQuilten & White, 2015). The quantified non-specific value is the social influence provided by artistic creative enterprises. Although there is no universally applicable definition, and it is a relatively new concept, but its development has great potential in the both the academic field and practical industry implication.

3. METHODOLOGY

3.1 Research design

This research is mainly to explore how to integrate the concepts of social innovation in the business model with specific advantages of the company, service providers, that uses art-creation in painting as its service content; how consumers, service receivers, evaluate their experience value during the service process, and then achieve social innovation. The research purpose focuses on the questions of "how and why" in which form the main body of the study is the enterprises' business model. Therefore, the suitable methodological approach is a multiple case study method (Yin, 2001). Based on the fact that the research object is most corporate representatives, and the research topics also involve the analysis of multiple summary theoretical concepts. The case study type will be a multiple-case embedded designs. This research takes multiple case-detailed interviews with two non-profit art-creation in painting enterprises as the research objective. The logical sequence of its conclusions establishes related theoretical explanations. Next, the research results are relatively effective and applicable.

3.2 Case selection

The two enterprises that are representative and meet the research objectives of domestic art-creation in painting as the benchmark. This research conduct in-depth case studies on each enterprises' founders or main operators.

The two cases are in line with the thematic analysis of the research, and all have good performance in business and corporate management. The companies with the type of service content “art-creation in painting” is relatively new, which mostly the services provided by multiple presentation methods. However, as a relatively new type of industry, there is currently no clear definition and standard. Therefore, in the selection of cases, this research selects industry elites who provide services for art-creation in painting as innovation service in Greater Taipei area. The companies all need to have an operating time of more than five years. In addition to the differences in corporate organization, the part of art-creation in painting and service innovation has a considerable degree of homogeneity, which can provide effective research information for this study as a discussion on the connotation and process of service innovation and the establishment of specific practices.

3.3 Data collection and analysis

This study adopts qualitative analysis methods to conduct investigations and discoveries of case studies, collects interview data, and analyzes and explains the characteristics of the case based on theory. Thereby constructing a research model, the work of the research can be divided into four stages as exploration, description, comparison, and verification. The main informants for the semi-structured interviews throughout the research were founders who were actively involved in the service process of the business. First of all, using e-mail or telephone contact to obtain the interview willingness from the industry elites. Before carrying out the actual interview, the interview outline will be provided to the interviewers. If the interviewers have any further questions, assistance answers will be provided through e-mail. Originally, this research adopts the method of personal face-to-face interviews, and open-ended audio recordings are made during the interview process. However, due to the COVID-19 pandemic restriction, some of the interviews were implemented online. The main direction is to use the interview outline as a design, however, open questions is permit without limitation. The process focus on asking questions in key research directions while preserving the space and flexibility for respondents to answer. The interview time for each interviewer is approximately sixty minutes to ninety minutes.

Details about the interviews are listed below: (1) The interview companies' name are anonymous, coded as Company A and Company B; (2) The interviewers are CEO of the companies. The interview dates are 2021.07.30 for Company A and 2021.08.04 for Company B; (3) The interview recording files are converted into verbatim manuscripts afterward and its approximately 11,000 words for each one; (4) The internal and external validity and reliability can be analyzed through triangulation-literature discussion, in-depth interview, and practical observation (Yin, 2001).

4. FINDINGS AND DISCUSSION

The interviewers, which are the operators of the two companies both expressed that the original core concept of the establishment of the company was not profit-oriented. Through their own observations, the motivation for the establishment of the company using art-creation in painting as the business model was the practical solution that solved the observed social phenomenon. In the analysis of the relationship between the company's specific advantages and service innovation, this research summarizes that the essence of the company and the personal characteristics of the operators, in which deeply influences the core value propositions of the enterprises. Precisely because enterprises of this kind of business model usually start from the non-profit starting point, therefore, there is a core value beyond the material economy behind the business operation. The operators can all clearly state their core values of their companies, and fully explain how to achieve their original intentions from time to time during their development process. The research show that art organizations participate in creating value to customers, providers, and other stakeholders, and the processes is conceptualized within a service system (Williams, Biggemann, & Toth, 2020). Using different strategies to adjust their business models which have obvious influence on social consciousness. Different social issues were solved both tangibly and intangibly, which also shows that their corporate value propositions have reached different levels of social contribution.

The service-oriented business model is more unique and not easily replaced. The supply and acceptance of value in service are easier to develop a diversified orientation which provide enterprises with various potential business models in the similar industry, so as to achieve the goal of sustainable operation. Research show that the use of the concept of service system of the dynamic and interdependent network of people, technologies and various recourse that interact with other service system to create value seeks to take it as a broader phenomenon (Koskela-Huotari et al., 2021). The research shows that painting is a very kind and easy activity to get started that is mostly suitable for everyone, from children to the elderly. It is a service that is easily accepted by the public.

Most of the art-creation in painting enterprises take the non-profit nature as the original intention of starting a business. However, in addition to a clear value proposition, it must also face and consider the reality. The arrangement of internal and external business strategies, the composition and management of the core team are

important key factors in the business operations. Research also shows that some small and medium sized enterprises usually are more rigorous about their service performance (Royo-Vela & Velasquez Serrano, 2021). The planning of internal business strategy includes organizational culture, human resource allocation, financial model, and technology application, etc. The external business strategy uses available business partner resources as a supplementary energy for the business operations.

A good service innovation in business, in addition to using appropriate tools to explore the consumers' situation, it can also observe and experience the actual feelings of consumers. Through the interview, it is concluded that the design of the experience process of the art-creation in painting enterprise present a diversified phenomenon. Even more, the key factors are inextricably related to the core value of the enterprise. Another special phenomenon is that service innovation in business that uses art-creation in painting as a medium pays special attention to the impact on consumers after the service experience. Recent research says that in the age of digitalization, service efforts on intra-organizational process and service delivery, with limited attention being paid to the actual user experience (Eriksson & Hellström, 2020; Trischler & Trischler, 2021). However, special phenomenon is that service in business that uses art-creation in painting as a medium pays special attention to the impact on consumers' service experience. Both companies claims that is not only the current experience, but the service can have a long-lasting impact is what they are aiming for. Painting is an activity of human instinct. Through the service process experience designed by these enterprise in which awakening the memory of all of us. This is a major feature of art-creation in painting as a service.

CONCLUSION

This research explores how to integrate the concepts of social innovation in the business model with specific advantages of the company, using painting as its service content; how consumers evaluate their experience value during the service process, and achieve social innovation under the service. It brings the viewpoint of art into service science, and combines creative and innovative thinking with business operations. The outcome offers a practical implication for the business structure of enhancing social value under the development of creative industries. The healing value in service from art-creation in painting is a natural and unavoidable side effect, precisely because it is an ongoing industry in the market. It is founded that the service of painting has obvious influence on social consciousness, and invisibly solved different categories of social issues. It also shows that corporates' different value propositions have reached different levels of social contribution and innovation. From an economic perspective, in the era of experience economy, art-creation in painting as a service shows optimistic future development. There is also a phenomenon of supply and demand reflected in the current market. Therefore, it is proper and to be expected as a matter of course worthy of more in-depth discussion.

Painting is one of human's original entertainment methods together with singing and dancing. The corporate model of art-creation in painting serves just to provide the general public with the original essence of painting. In the process of free creation, it can not only achieve the effects of emotional healing and stress relieving, but also cultivate and enhance creativity in the process of starting from nothing. And the whole process satisfies the sense of accomplishment that modern people seldom complete by themselves. The happiness brought by art-creation in painting extends to the development of service innovation. It is an industry that takes altruism as the starting point to go far. Painting is a creative force, a bridge that humans need it to communicate with themselves. And even more can also become a connection with others in life through the power of painting. Painting is a relatively easy channel for art to penetrate into everyday life. Long-term development also has a positive influence on the art acumen and appreciation to the public. Social enterprises are based on the type of enterprise that solves the problems certain social phenomena. Therefore, it has a greater chance that these companies would need to make a trade-off between adherence to the core value of the enterprise and the government's economic assistance. In conclusion, the popularity and its easy accessibility reinforce the use of art-creation in painting to carry out internal expression channels, which can be service innovation model with great potential for development.

This research discusses the possible directions and suggestions that the service of art-creation in painting can be used as an extended study. The first is the strategic development of the application of service in experience economy to the society. In experience economy, service actors implement the business strategy of service value exchange, and then achieve the benefits of social value co-creation. The second is the conceptual practice of combining creative industries with service innovation. This research provides different-oriented business models for the creative industries. In addition to economic value, it also brings other positive added values to the society. Companies provide service innovation in more different forms and the development possibilities of various types of enterprises, and last extend to achieve the vision of social innovation.

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A SUCCESS AND FAILURE OF AGRI-ENTREPRENEURSHIP ON COVID-19 IN MYSORE DISTRICT

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ABSTRACT

Agri-entrepreneurship is an emerging field. Agri-Entrepreneurship means in daily language, the term "entrepreneur" is often interchangeably used with business owner, starter, someone who is self-employed, sole-trader, or farmer. thereby confusing status, a position in society with role behavior in a particular position. India is an Agrarian country, Agriculture remains a key sector of the Indian economy, Agribusiness plays very essential role to re defining agricultural sector in Mysore District. It makes more advantages venture can lead to economic self-sufficiency which attracts rural people in the present scenario. Agri-Entruprenuership provides employment opportunities, income generation, in the development aspects. The covid-19 pandemics is a global health crisis that is really agriculture and Agri-Entruprenuership, Agri-Entruprenuership paper mainly focused on the Success and failure of Agri-entrepreneurship in Mysore district.

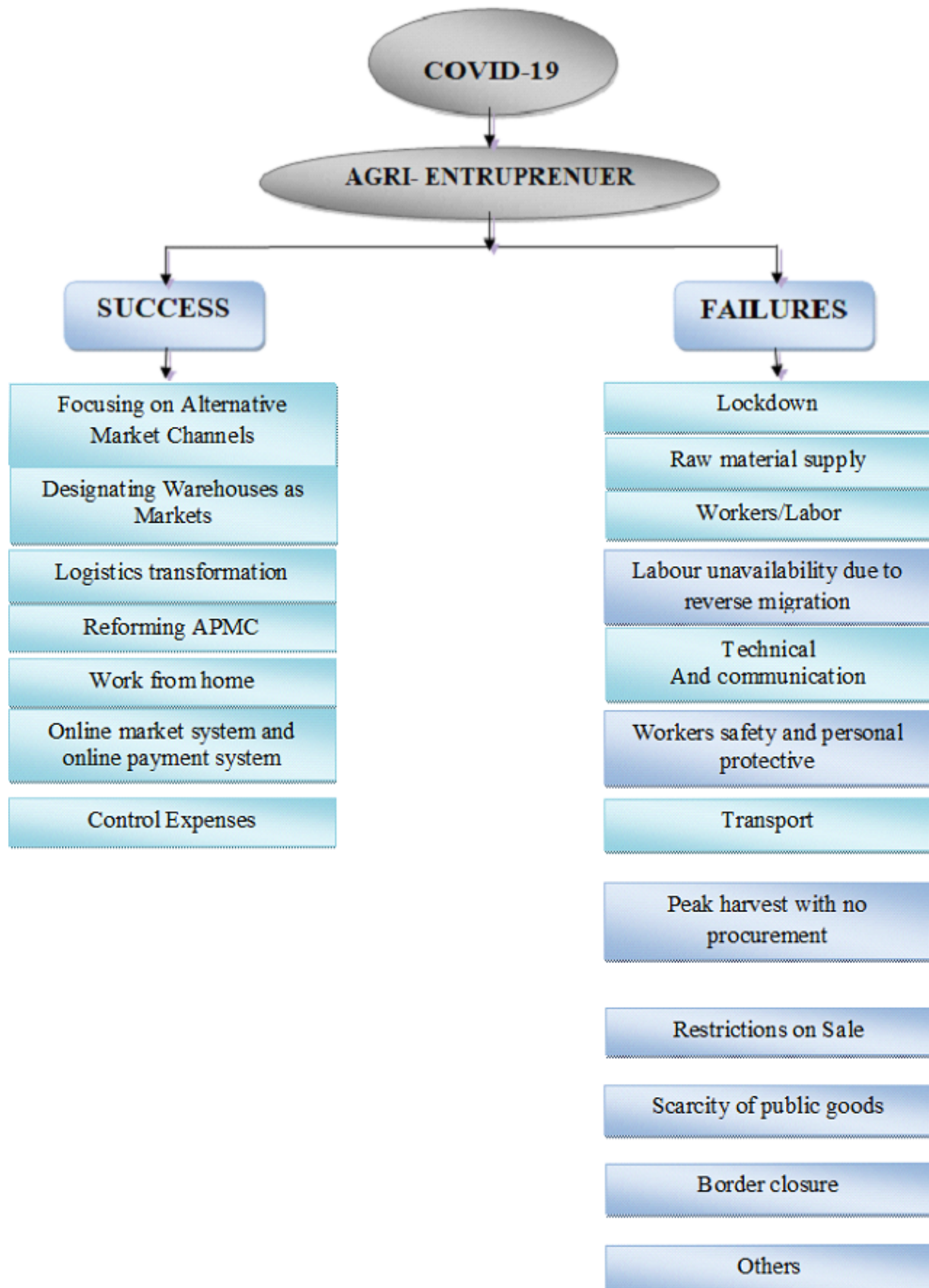
Key words: Agriculture, Entrepreneur, Covid-19, Success and failure

INTRODUCTION

Agri-entrepreneurship is an emerging field. Agri-Entrepreneurship means in daily language, the term "entrepreneur" is often interchangeably used with business owner, starter, someone who is self-employed, sole-trader, or farmer. thereby confusing status, a position in society with role behavior in a particular position. Need of Agricultural Entrepreneurship is intraditionally, agriculture is seen as a low-tech industry with limited dynamics dominated by numerous small family firms which are mostly focused on doing things better rather than doing new things. Over the last decade, this situation has changed dramatically due to economic liberalization, a reduced protection of agricultural markets, and a fast changing, more critical, society. Agricultural companies increasingly have to adapt to the vagaries of the market, changing consumer habits, enhanced environmental regulations, new requirements for product quality, chain management, food safety, sustainability, and so on. These changes have cleared the way for new entrants, innovation, and portfolio entrepreneurship. India is basically an agriculture based economy, approximately 70 per cent people is living rural areas depending on the agriculture and allied sector, Entrepreneurship is one of the key drivers for economic development. During an economic crisis, the importance of entrepreneurship development increases. Agripreneurship rotate farm into an agribusiness. Agribusiness plays very essential role of defining agricultural sector in India. It make more advantageous venture can lead to economic self-sufficiency which attracts rural people in the present scenario. Agri-Entruprenuership provides employment opportunities, income generation, alleviating poverty, food security and rural livelihood in the development aspects. Most of the farmers lack in access of agricultural raw materials, financial assistance, marketing arrangements, accessing new technologies and advisory services for commercial farming. Indian culture has personified in agriculture. It is an age-old income generation activity in India. Predominantly, Indian economy is heavily dependent on Agriculture and other allied activities. Agriculture sector is providing foodstuff to all sections of the people in India and outside India. Indian agriculture sector has dominated by a large number of small scale holdings that are predominantly owner occupied mostly in an unorganized way of activities. Making the food grains, fruits and vegetables and other essential items available to consumers, both in rural and urban areas, is the most critical challenge for Government machinery during the lockdown period. Smooth functioning of the supply chain, with adequate safety measures for the people involved, is of paramount importance. Transportation of public distribution system Distribution of the commodities to vulnerable population, while maintaining prescribed guidelines and protocol, particularly of social distancing, must be effectively monitored.

Entrepreneurship is the process by which individuals become conscious of business ownership as an option or viable alternative, develop ideas for business, learn the process of becoming an entrepreneur and undertake the initiation and development of a business. Entrepreneurship signifies the practical application of enterprise qualities, such as initiation, creativity, innovation and risk taking into work environment. On the contrary, they are likely to be compounded at the onset of the new agricultural sowing season. There is a greater need for government support in the form of support for other agricultural inputs. Lack of any relief will only make the

agricultural crisis worse. The need of the hour is to maximize possibilities of agriculture, which has demonstrated its utility and resilience in trying times.



This picture show on Covid-19 situation for Agri-entrepreneurs there are so many problems facing every day but in this situation automatically improvement of business, how to improve, how to reach each and every one covid-19 situation, Entrepreneurs planning and improve slowly critical situation for lockdown, transportation,

Unavailable raw material supply, labor problem, government rules and regulation covid-19. The end of the lockdown will not end the problems. Future days problem solve slowly recovery all agriculture activities greater need for government support in the form of support for other agriculture.

Objectives

1. To know the present status of Agri-entrepreneurs in the study area.
2. To identify the problems faced by agri-entrepreneurs at different stages of entrepreneurial activity on covid-19 situation.
3. To offer suggestions for developing entrepreneurship in agriculture.

Importance of the study

Agri-entrepreneurship is an emerging field. Agriculture is seen as a low-tech industry with limited dynamics dominated by numerous small family firms which are mostly focused on doing things better rather than doing new things. Over the last decade, this situation has changed dramatically due to economic liberalization, a reduced protection of agricultural markets, and a fast changing, more critical, society. Agricultural companies increasingly have to adapt to the vagaries of the market, changing consumer habits, enhanced environmental regulations, new requirements for product quality, chain management, food safety, sustainability, and so on. These changes have cleared the way for new entrants, innovation, and portfolio entrepreneurship. The present study is a modest attempt to analyses A Study on Agri-Entrepreneurship on Covid-19 in Mysore District.

METHODOLOGY

The study is based on secondary data, secondary data have been collected from the concerned Departments such as the Department of Agriculture, National Horticulture Board, Directorate of Economics and Statistics, Agricultural and Processed Food Products Export Development Authority (APEDA). In addition to this, the secondary data have been collected from the Annual Reports, Government Publications, Seminar Volumes, Books and Journals and dailies and electronic media. Library research has been engaged for the purpose of a review of relevant literature and for the purpose of assembling ideas which could go into the Article.

Review of literature

Kilby (1971): "The array of all possible entrepreneurial roles encompasses the perception of economic opportunity, technical and organizational innovations, gaining command over scarce resources, taking responsibility for internal management and for the external advancement of the firm in all its aspects." Broadly speaking, an entrepreneur is a person facing a problem in the background of an objective. He is a risk taker, an uncertainty bearer, Co-coordinators, an innovator and a decision maker at a time or all the time according to Circumstances.

Bhattacharya (1983) analyzed the problem of entrepreneurship development in South-East Asian countries. Specifically, the study highlighted the agricultural enterprise model consisting of conceptual acts, conceptual environment, physical environment, individual and cooperative objectives with a successful integration of planning, organization, directing and controlling of farm operations. It was an armchair study made by using secondary source of information.

Hadimani (1984) studied 194 land owning cultivators in Chakrabhavi village of Bangalore District and found that the success of these agricultural entrepreneurs was a joint product of several factors in operation. The large farmers succeeded in agriculture because of the favorable factors and small farmers because of unfavorable factors. He also found that the general level of agricultural entrepreneurship was low in the village because most of the favorable factors in operation were lacking in the village.

Singh (1985) examined the relationship between the development programmes and political leadership in rural India based on the responses of 415 respondents consisting of rural political leaders and agricultural entrepreneurs in Bilariaganj block of Ajamgarh district in Uttar Pradesh by evaluating the value attributes consisting of politicization, democratization and universalism and value components consisting of empathy, efficacy and achievement. The major conclusions of the study were : (i) Majority of rural entrepreneurs were democratic and they mainly belonged to dominant upper caste groups; (ii) The entrepreneurs were -found with land oriented conservatism as they associated special values with land; (iii) They were well exposed to mass media with greater political awareness and involvement; and (iv) With low awareness of political process, the weaker sections of the society had not been provided with adequate loans and subsidies, even though they had all the potentialities to take up agricultural ventures; instead these facilities were garnered by the upper strata of society having political linkages.

European Communities (2003): The entrepreneur is commonly seen as an innovator - a designer of new ideas and business processes. Entrepreneurship is the capability to develop ideas and attain success with them. Innovation, ability to accept change and risk and the organization of resources are some of the factors involved in creating a sustainable enterprise. The entrepreneurial spirit is responsible for generating employment, competitiveness and the ability to exploit any sector or business.

Bairwa et al (2014): Agri-entrepreneurship in common language can be defined as sustainable, community-oriented, directly-marketed agriculture. Sustainable agriculture refers a system oriented approach to farming that put emphasis on the interrelationships of social, economic, and environmental processes. It is the beneficial combination of agriculture and entrepreneurship and convert your farm into an agribusiness. This association of agriculture and business promotes agripreneurs who innovate, identify markets, and satisfy needs by developing different ways. The term agri-entrepreneurship is similar with entrepreneurship in agriculture and describes agribusiness establishment in agriculture and allied sector.

FINDINGS OF THE STUDY

The research findings of this study are presented below.

Majority of the entrepreneurs comes from agricultural families; middle aged entrepreneurs are having more interest, Majority of the entrepreneurs had the medium economic status with medium social participation. And Majority of the entrepreneurs were innovative in planting of commercially valuable trees, adopting High Yielding Varieties, crop rotation and in inter-cropping. However, such innovativeness was lacking in growing unfamiliar crops, green manuring, water conservation, mechanized ploughing and usage of pesticides. Young and middle aged entrepreneurs were more inclined towards the usage of latest pesticides. The existence of agricultural knowledge with entrepreneurs was found to be existing rampantly in all the components except crop suitable for drip irrigation, names of pesticides and insecticides and soil suitable for High Yielding Varieties.

SUGGESTION

The study finds a strong Agri-entrepreneur along with the barriers of deficiency, inadequate the various challenges in covid-19, Agri-entrepreneur performance of risk understanding the future but also is necessity for improving the production identified the strength and achieving balancing the growth organization, Entrepreneur risk taking ability, leadership ability, medium level of decision making skill, innovative ideas to improve the performance in the Agri-enterprises by involve in developmental activities Agri-entrepreneur an individual risk for this situation easily handle improving the business. Agri-entrepreneurship is not only opportunity but it is also necessity for the improving and profitability of the business.

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A STUDY ON CLOTHING PURCHASING BEHAVIOR BY WOMEN WITH RESPECT TO APPAREL STORES

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ABSTRACT

Women play an important role in purchase of apparel products in general. Especially apparel exhibits women profession, status and confidence. Women purchase pattern changes when there is an increase in their education level and employment. Various researches explain the urban women (working and non-working), female adults and their important role in purchase behavior. This study focus on women workforce and their apparel purchase Behavior. The study helps the retailer to learn more about the present working women purchase behavior of apparel. The research is Descriptive in nature. The area of study taken under consideration is Chennai city. The researcher collected primary data through questionnaire method from women workforce. The study conducted through stratified random sampling method with sample size of 651 women professionals. Correspondence analysis on apparel stores and preferred attires reveals that there is a close association between super stores and purchase of saree as attire, specialty stores and super stores go in line with purchase of formal attire and shopping malls and super stores go along with during festival time of purchase

Keywords: Buying Behaviour, Women Workforce, Apparel market, Retail Stores

INTRODUCTION

Consumer behavior discusses on human thought association and the action executes by them during consumption. It is the field of study about individual knowledge gained which results in the purchase decision. The consumer behaviour depends on consumer needs and acquired knowledge on products. It involves multiple psychological aspects which include thinking, feeling, acting, etc. This process ends by inculcating the value to an addressed need of the consumer. The basic consumer behavior process can be further explained by the need recognition and followed by the specific desires or wants for the recognized need. The consumer understands the exchange decision that benefits in return for greater value. The consumer evaluates cost and benefit analysis for positive or negative consumption. The process ends with the purchase of final end product and the value associated with it. This process results in perception of value and in turn leads to repeated purchase of the customers. (Figure:1.1)

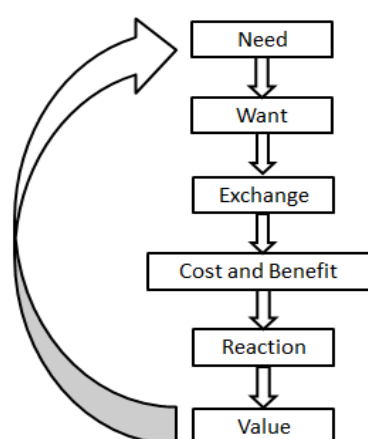


Figure: 1.1 Consumer Buying Behaviour Process

NEED AND IMPORTANCE OF THE STUDY

By understanding the pulse of women consumers, sellers can able to design the product, promote accordingly, package it, position in the minds of women customers and choose appropriate place of distribution. The women market crossed through various theories on buying motives. These motives differ from men to women, the masculinity of men nature reflects in his purchase behaviour. But women purchase decision not only covers feminine character but also the society's culture.

STATEMENT OF THE PROBLEM

The study aims in identifying factors involve in women purchase behaviour towards the women garments. Hence an attempt has been made by the researcher to carry out a research on the topic “**A STUDY ON CLOTHING PURCHASING BEHAVIOR BY WOMEN WITH RESPECT TO APPAREL STORES**”

OBJECTIVE OF THE STUDY

To understand the position of preferred place for apparel purchase and preferred attire of apparel by women consumers

To understand the position of preferred place for apparel purchase and Outfit style purchased mostly by women consumers

To understand the position of preferred place for apparel purchase and Frequency of purchase by women consumers

HYPOTHESES OF THE STUDY

Ho: There is no significance between preferred place of apparel purchase and preferred attire

Ho: There is no significance between preferred place for apparel purchase and Outfit style purchased mostly

Ho: There is no significance between preferred place of apparel purchase and Frequency of purchase

RESEARCH METHODOLOGY

The research is Descriptive in nature. The area of study taken under consideration is Chennai city. The sample method adopted in this study is probability sampling. Stratified random sampling is the procedure used for this study. A larger population is divided into different groups and then the sample is chosen. *The sample of 385 women professionals in the Chennai city is the target population and it is enough to give the confidence level.* The researcher collected primary data through questionnaire method, the researcher visited libraries, and online journals from newspapers, magazines and book reviews related to apparel and buying behavior. The questionnaire was constructed in view of the framed objectives.

FRAME WORK OF ANALYSIS

To analyze the data collected through primary and secondary sources, statistical tools such as percentage analysis, Chi-square and correspondence analysis were used.

CORRESPONDENCE ANALYSIS

Correspondence analysis (CA) is a technique for graphically displaying a two-way table by calculating coordinates representing its rows and columns. These coordinates are analogous to factors in a principal components analysis (used for continuous data), except that they partition the Chi-square value used in testing independence instead of the total variance.

LIMITATIONS OF THE STUDY

- This study is confined to Chennai city and the same factors cannot be an influencing factor for the women professionals in other areas.
- This study covers only retail outlet consumer preference and the organized apparel sector and hence it omits unorganized apparel market.
- The researcher concentrates on women purchase behaviour for her own attire, the purchasing for her entire family is not considered in this study.
- Apparel includes clothing and accessories worn. This study is restricted only to clothing.

REVIEW OF LITERATURE

Praveen Paul (2019) observes that there is a significant difference in the satisfaction of different age groups of women on whole shopping experience of apparels buying. His study also proves that shopping experience among women in different professions is satisfactory. These findings can be strategically implemented into apparel market

Krishnakumar (2018) discusses the future buying intention the major factors would be consumer attitude, store attributes, external factors, product attributes, etc. Along with these influencing factors their past experience of purchase also plays a major role. This research constructs between future apparel buying intention and past apparel buying behaviour or experience. The findings of the study are partial mediating effects of past apparel buying behaviour and experience on future apparel buying intention. With these findings, managerial implications have been suggested for the apparel retailers.

Bhat et al. (2013) have observed various characteristics of Sunday marketplace within the capital of Jammu And Kashmir State. The predominant aim is to have a look at the good rate shape of merchandise offered in the marketplace. There is also job pleasure of companies and motives for joining the Sunday marketplace. With the responses from 200 customers it is inferred that there is inexpensive prices than normal expenses. It is found that both sellers and customers were satisfied within the marketplace.

SriparnaGuha (2013) in his study on the modern marketing concept influences the working women segment. This paper investigates the varying perception of working women. Here working and non-working womens buying behaviour of women in Urban is compared. Because of the numerous roles her buying behavior influences herself and also her whole family members. This study reveals that women's workforce are price, quality and brand conscious, Also they are highly influenced by the others while purchasing.

CORRESPONDENCE ANALYSIS-APPAREL STORES AND PREFERRED ATTIRE

To understand the position of preferred place for apparel purchase and preferred attire, correspondence analysis is used. Correspondence table is presented in below Table

Table: Correspondence Table of the Apparel Stores and Preferred Attire

| Correspondence Table | | | | |
|--------------------------------------|------------------|-----------|--------------|---------------|
| preferred place for apparel purchase | Preferred Attire | | | |
| | Saree | Chudidhar | Western Wear | Active Margin |
| Super Store | 88 | 46 | 13 | 147 |
| Shopping Malls | 139 | 84 | 22 | 245 |
| Speciality Stores | 69 | 59 | 19 | 147 |
| Boutiques | 20 | 25 | 0 | 45 |
| e-commerce portals | 26 | 22 | 10 | 58 |
| Others | 6 | 2 | 1 | 9 |
| Active Margin | 348 | 238 | 65 | 651 |

Source: Primary data

From the table, the consumers tend to prefer Shopping malls more than other preferred places for apparel purchase followed by Super store, Speciality Stores, e-commerce portals, boutiques and other places.

The summary table of preferred place of apparel purchase and preferred attire is presented in the table. It is observed that there is a statistical significance between preferred place of apparel purchase and preferred attire at 5% level of significance.

Table: Summary Table of Preferred place of apparel purchase and Preferred Attire

| Summary | | | | | | | | |
|--------------------------|----------------|---------|------------|-------------------|-----------------------|------------|---------------------------|-------------|
| Dimension | Singular Value | Inertia | Chi Square | Sig | Proportion of Inertia | | Confidence Singular Value | |
| | | | | | Accounted for | Cumulative | Standard Deviation | Correlation |
| | | | | | | | | |
| 1 | .131 | .017 | | | .549 | .549 | .031 | .041 |
| 2 | .119 | .014 | | | .451 | 1.000 | .040 | |
| Total | | .031 | 20.389 | .026 ^a | 1.000 | 1.000 | | |
| a. 10 degrees of freedom | | | | | | | | |

Source: Computed data

The proportion of inertia value accounts for dimension 1 = 0.549 means that the dimension 1 can explain the association of the variables 54.9 per cent. The proportion of inertia value accounts for dimension 2 = 0.451 means that the dimension 2 can explain the association of the variables 45.1 per cent.

Hence, the first dimension accounts 54.9 per cent of inertia that provides enough accuracy to describe the consumers' perceptions in two dimensions.

The overview of row points of preferred place of apparel purchase and preferred attire is presented in Table.

Table : Overview of Row Points of the preferred place of apparel purchase and preferred attire

| Overview Row Points ^a | | | | | | | | | |
|--------------------------------------|-------|--------------------|-------|---------|----------------------------------|-------|----------------------------------|------|-------|
| preferred place for apparel purchase | Mass | Score in Dimension | | Inertia | Contribution | | | | |
| | | 1 | 2 | | Of Point to Inertia of Dimension | | Of Dimension to Inertia of Point | | |
| | | | | | 1 | 2 | 1 | 2 | Total |
| 1 | .227 | -.051 | .359 | .004 | .004 | .245 | .022 | .978 | 1.000 |
| 2 | .377 | -.082 | .172 | .002 | .019 | .093 | .202 | .798 | 1.000 |
| 3 | .225 | .244 | -.311 | .004 | .102 | .183 | .405 | .595 | 1.000 |
| 4 | .068 | -.937 | -.816 | .013 | .454 | .380 | .593 | .407 | 1.000 |
| 5 | .090 | .706 | -.305 | .007 | .339 | .070 | .855 | .145 | 1.000 |
| 6 | .014 | -.875 | .498 | .002 | .081 | .029 | .773 | .227 | 1.000 |
| Active Total | 1.000 | | | .031 | 1.000 | 1.000 | | | |
| a. Symmetrical normalization | | | | | | | | | |

a. Symmetrical normalization

Source: Computed data

The overview of column points of preferred place of apparel purchase and preferred attire is presented in Table.

Table: Overview of Column Points of the preferred place of apparel purchase and preferred attire

| Overview Column Points ^a | | | | | | | | | |
|-------------------------------------|-------|--------------------|-------|---------|----------------------------------|-------|----------------------------------|------|-------|
| Prefrred Attire | Mass | Score in Dimension | | Inertia | Contribution | | | | |
| | | 1 | 2 | | Of Point to Inertia of Dimension | | Of Dimension to Inertia of Point | | |
| | | | | | 1 | 2 | 1 | 2 | Total |
| 1 | .537 | -.102 | .305 | .007 | .043 | .420 | .110 | .890 | 1.000 |
| 2 | .367 | -.141 | -.433 | .009 | .055 | .577 | .105 | .895 | 1.000 |
| 3 | .096 | 1.113 | -.053 | .016 | .902 | .002 | .998 | .002 | 1.000 |
| Active Total | 1.000 | | | .031 | 1.000 | 1.000 | | | |
| a. Symmetrical normalization | | | | | | | | | |

a. Symmetrical normalization

Source: Computed data

From the Table the co-ordinate's score of two dimensions for row and column are plotted as in figure

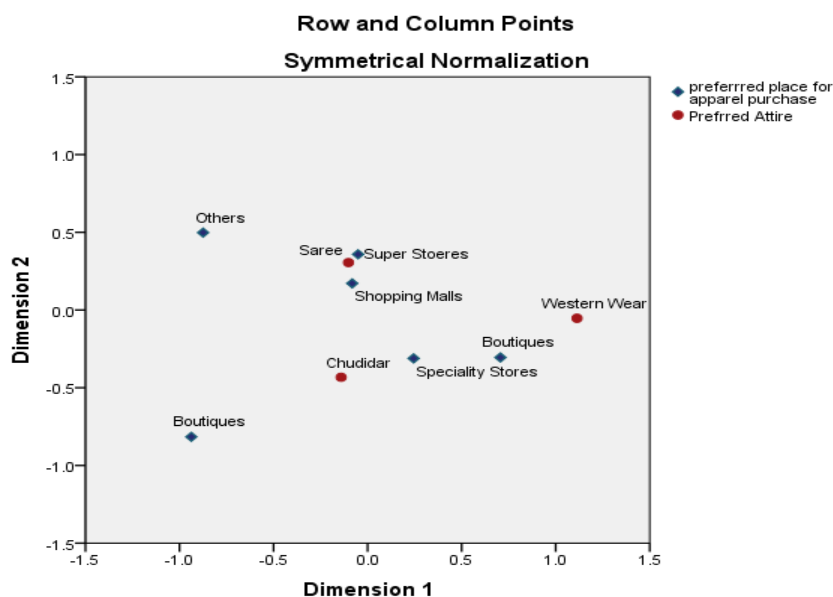


Figure: Correspondence analysis on apparel stores and preferred attires

Correspondence analysis on apparel stores and preferred attires reveals that there is a close association between super stores and purchase of saree as attire.

CORRESPONDENCE ANALYSIS- PREFERRED PLACE FOR APPAREL PURCHASE AND OUTFIT STYLE PURCHASED MOSTLY

To understand the position of preferred place for apparel purchase and Outfit style purchased mostly, correspondence analysis is used. Correspondence table is presented in Table.

Table: Correspondence Table of the preferred place for apparel purchase and Outfit style purchased mostly

| Correspondence Table | | | | | |
|--------------------------------------|-------------------------------|--------|------------|-------------|---------------|
| Preferred place for apparel purchase | Outfit style Purchased mostly | | | | |
| | Casual | Formal | Party Wear | Ethnic Wear | Active Margin |
| Super Store | 82 | 60 | 0 | 5 | 147 |
| Shopping Malls | 141 | 64 | 25 | 15 | 245 |
| Speciality Stores | 86 | 51 | 0 | 10 | 147 |
| Boutiques | 14 | 15 | 5 | 11 | 45 |
| e-commerce portals | 39 | 19 | 0 | 0 | 58 |
| Others | 9 | 0 | 0 | 0 | 9 |
| Active Margin | 371 | 209 | 30 | 41 | 651 |

Source: Primary data

From the table, the consumers tend to prefer Shopping malls followed by Superstore, Speciality Stores, e-commerce portals, boutiques, and others.

The summary table of preferred place for apparel purchase and Outfit style purchased mostly is presented in Table. It is observed that there is a statistical significance between preferred place for apparel purchase and Outfit style purchased mostly at 0.05 level of significance.

Table: Summary Table of Preferred place for apparel purchase and out fit style purchased mostly

| Summary | | | | | | | | |
|--------------------------|----------------|---------|------------|-------------------|-----------------------|------------|---------------------------|--------------|
| Dimension | Singular Value | Inertia | Chi Square | Sig. | Proportion of Inertia | | Confidence Singular Value | |
| | | | | | Account ed for | Cumulative | Standard Deviation | Correlati on |
| | | | | | | | | |
| 1 | .293 | .086 | | | .651 | .651 | .038 | -.054 |
| 2 | .195 | .038 | | | .288 | .940 | .043 | |
| 3 | .089 | .008 | | | .060 | 1.000 | | |
| Total | | .132 | 86.011 | .000 _a | 1.000 | 1.000 | | |
| a. 15 degrees of freedom | | | | | | | | |

Source: Computed data

The proportion of inertia value accounts for dimension 1 = 0.651 means that the dimension 1 can explain the association of the variables 65.1 per cent. The proportion of inertia value accounts for dimension 2 = 0.288 means that the dimension 2 can explain the association of the variables 28.8 per cent. The proportion of inertia value accounts for dimension 3 = 0.060 means that the dimension 3 can explain the association of the variables 6 per cent.

Hence, the first dimension accounts 65.1 per cent of inertia that provides enough accuracy to describe the consumers' perceptions in two dimensions.

The overview of row points of is presented preferred place for apparel purchase and Outfit style purchased mostly in Table.

Table: Overview of Row Points of Preferred place for apparel purchase and Outfit style purchased mostly

| Overview Row Points ^a | | | | | | | | | |
|--------------------------------------|-------|--------------------|--------|---------|----------------------------------|-------|----------------------------------|------|-------|
| preferred place for apparel purchase | Mass | Score in Dimension | | Inertia | Contribution | | | | |
| | | 1 | 2 | | Of Point to Inertia of Dimension | | Of Dimension to Inertia of Point | | |
| | | | | | 1 | 2 | 1 | 2 | Total |
| 1 | .226 | .457 | .282 | .019 | .161 | .092 | .736 | .186 | .922 |
| 2 | .376 | -.373 | -.438 | .030 | .179 | .369 | .515 | .472 | .987 |
| 3 | .226 | .292 | .311 | .011 | .066 | .112 | .511 | .385 | .896 |
| 4 | .069 | -1.379 | .932 | .051 | .448 | .307 | .762 | .231 | .993 |
| 5 | .089 | .641 | -.189 | .011 | .125 | .016 | .944 | .054 | .999 |
| 6 | .014 | .684 | -1.207 | .010 | .022 | .103 | .182 | .377 | .559 |
| Active Total | 1.000 | | | .132 | 1.000 | 1.000 | | | |
| a. Symmetrical normalization | | | | | | | | | |

a. Symmetrical normalization

Source: Computed data

The overview of column points of preferred place for apparel purchase and Outfit style purchased mostly is presented in Table 4.58.

Table: Overview of Column Points of Preferred place for apparel purchase and Outfit style purchased mostly

| Overview Column Points ^a | | | | | | | | | |
|-------------------------------------|-------|--------------------|--------|---------|----------------------------------|-------|----------------------------------|------|-------|
| Type of apparel purchased monthly | Mass | Score in Dimension | | Inertia | Contribution | | | | |
| | | 1 | 2 | | Of Point to Inertia of Dimension | | Of Dimension to Inertia of Point | | |
| | | | | | 1 | 2 | 1 | 2 | Total |
| 1 | .570 | .201 | -.236 | .014 | .078 | .162 | .467 | .428 | .895 |
| 2 | .321 | .162 | .371 | .014 | .029 | .227 | .171 | .596 | .766 |
| 3 | .046 | -1.843 | -1.073 | .057 | .534 | .272 | .799 | .180 | .979 |
| 4 | .063 | -1.294 | 1.025 | .046 | .359 | .339 | .676 | .282 | .958 |
| Active Total | 1.000 | | | .132 | 1.000 | 1.000 | | | |
| a. Symmetrical normalization | | | | | | | | | |

a. Symmetrical normalization

Source: Computed data

From the table, the co-ordinate's score of two dimensions i.e., Preferred place for apparel purchase and Outfit style purchased mostly for row and column are plotted as in figure.

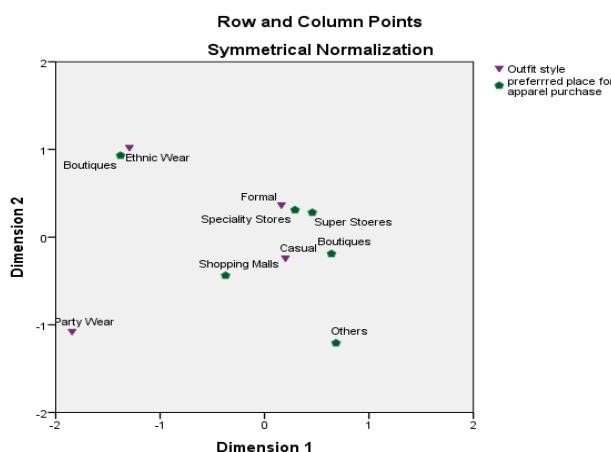


Figure Correspondence analysis on preferred place for apparel purchase and outfit style purchased mostly

Correspondence analysis on preferred place for apparel purchase and outfit style purchased mostly reveals that specialty stores and super stores go in line with purchase of formal attire.

CORRESPONDENCE ANALYSIS-APPAREL STORES AND FREQUENCY OF PURCHASE

To understand the position of preferred place for apparel purchase and Frequency of purchase, correspondence analysis was used. Correspondence table is presented in

Table: Correspondence Table of apparel stores and frequency of purchase

| preferred place for apparel purchase | Frequency of shopping | | | | | |
|--------------------------------------|-----------------------|-------------------|-----------------|------------------|-------------|---------------|
| | Once in a week | Once in Fortnight | Once in a month | During Festivals | Very Rarely | Active Margin |
| Super Stores | 16 | 5 | 60 | 37 | 29 | 147 |
| Shopping Malls | 35 | 5 | 115 | 64 | 26 | 245 |
| Speciality Stores | 5 | 0 | 86 | 36 | 20 | 147 |
| Boutiques | 5 | 0 | 33 | 15 | 5 | 58 |
| Others | 5 | 0 | 0 | 4 | 0 | 9 |
| Active Margin | 70 | 21 | 309 | 166 | 85 | 651 |

Source: Computed data

From the above table, the consumers tend to prefer Shopping malls more than other preferred places for apparel purchase followed by Super store, Speciality Stores, boutiques and other places.

The summary table of preferred place of apparel purchase and Frequency of purchase is presented in Table. It is observed that there is a statistical significance between preferred place of apparel purchase and Frequency of purchase at 1% level of significance.

Table: Summary Table of Preferred place of apparel purchase and Frequency of Purchase

| Summary | | | | | | | | |
|-----------|----------------|---------|------------|-------------------|-----------------------|------------|---------------------------|---------------|
| Dimension | Singular Value | Inertia | Chi Square | Sig. | Proportion of Inertia | | Confidence Singular Value | |
| | | | | | Accounted for | Cumulative | Standard Deviation | Correlation 2 |
| 1 | .339 | .115 | | | .622 | .622 | .070 | .065 |
| 2 | .238 | .056 | | | .305 | .927 | .045 | |
| 3 | .115 | .013 | | | .072 | .998 | | |
| 4 | .017 | .000 | | | .002 | 1.000 | | |
| Total | | .185 | 120.533 | .000 ^a | 1.000 | 1.000 | | |

a. 20 degrees of freedom

Source: Computed data

The proportion of inertia value accounts for dimension 1 = 0.622 means that the dimension 1 can explain the association of the variables 62.2per cent. The proportion of inertia value accounts for dimension 2 = 0.305 means that the dimension 2 can explain the association of the variables 30.5per cent. The proportion of inertia value accounts for dimension 3 = 0.072 means that the dimension 3 can explain the association of the variables 7.2 per cent. The proportion of inertia value accounts for dimension 4 = 0.002 means that the dimension 4 can explain the association of the variables 0.2 per cent.

Hence, the first dimension accounts 62.2per cent of inertia that provides enough accuracy to describe the consumers' perceptions in two dimensions.

The overview of row points of preferred place of apparel purchase and Frequency of purchase is presented in Table.

Table: Overview of Row Points of the preferred place of apparel purchase and Frequency of purchase

| Overview Row Points ^a | | | | | | |
|--------------------------------------|------|--------------------|---|---------|----------------------------------|----------------------------------|
| Preferred place for apparel purchase | Mass | Score in Dimension | | Inertia | Contribution | |
| | | 1 | 2 | | Of Point to Inertia of Dimension | Of Dimension to Inertia of Point |

| | | | | | 1 | 2 | 1 | 2 | Total |
|-------------------|-------|-------|-------|------|-------|-------|------|------|-------|
| Super Stoeres | .226 | -.057 | .012 | .010 | .002 | .000 | .026 | .001 | .026 |
| Shopping Malls | .376 | .095 | .248 | .008 | .010 | .098 | .147 | .705 | .852 |
| Speciality Stores | .226 | .390 | -.486 | .025 | .101 | .224 | .473 | .515 | .989 |
| Boutiques | .089 | .363 | -.122 | .006 | .035 | .006 | .636 | .051 | .687 |
| Others | .014 | .124 | 3.328 | .037 | .001 | .644 | .002 | .994 | .996 |
| Active Total | 1.000 | | | .185 | 1.000 | 1.000 | | | |

a. Symmetrical normalization

Source: Computed data

The overview of column points of preferred place of apparel purchase and Frequency of purchase is presented in Table.

Table: Overview of Column Points of the preferred place of apparel purchase and Frequency of Purchase

| Overview Column Points ^a | | | | | | | | | |
|-------------------------------------|-------|--------------------|-------|---------|----------------------------------|-------|----------------------------------|------|-------|
| Frequency of shopping | Mass | Score in Dimension | | Inertia | Contribution | | | | |
| | | 1 | 2 | | Of Point to Inertia of Dimension | | Of Dimension to Inertia of Point | | |
| | | | | | 1 | 2 | 1 | 2 | Total |
| Once in a week | .108 | -.111 | 1.277 | .042 | .004 | .738 | .011 | .988 | .999 |
| Once in Fortnight | .032 | -3.130 | -.422 | .109 | .931 | .024 | .986 | .013 | .999 |
| Once in a month | .475 | .212 | -.289 | .019 | .063 | .167 | .382 | .495 | .877 |
| During Festivals | .255 | .044 | .183 | .002 | .001 | .036 | .070 | .842 | .911 |
| Very Rarely | .131 | .006 | -.252 | .013 | .000 | .035 | .000 | .154 | .154 |
| Active Total | 1.000 | | | .185 | 1.000 | 1.000 | | | |
| a. Symmetrical normalization | | | | | | | | | |

Source: Computed data

From the Table , the co-ordinate's score of two dimensions for row and column are plotted as in figure-.

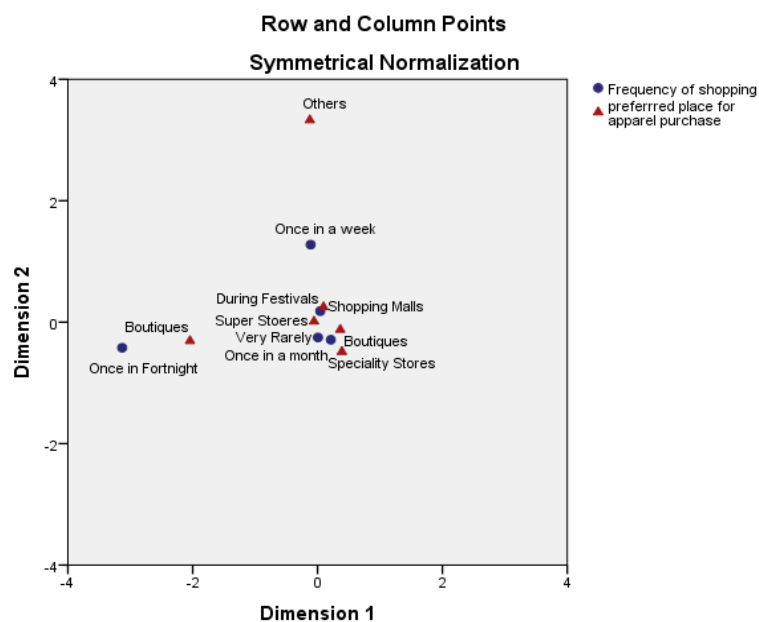


Figure: Correspondence analysis on apparel stores and frequency of purchase

Correspondence analysis on apparel stores and frequency of purchase results to shopping malls and super stores go along with during festival time of purchase.

FINDINGS

- Correspondence analysis on apparel stores and preferred attires reveals that there is a close association between super stores and purchase of saree as attire.
- Correspondence analysis on preferred place for apparel purchase and outfit style purchased mostly reveals that specialty stores and super stores go in line with purchase of formal attire.
- Correspondence analysis on apparel stores and frequency of purchase results to shopping malls and super stores go along with during festival time of purchase

SUGGESTIONS

The quality of apparel must be in such a way it must seek the attention of the women consumers when it is displayed in showroom. Women give more preference to factory's own outlet and hence the manufacturers can open their factory outlet to tap this market. Women are more conscious in touching the product and then sensing. They love an outlet which is women friendly and women centric, which feeds their purchase thirst. Hence the marketer can concentrate on these aspects in promoting their product physically. Store location must be accessible and well connected with transport to attract women consumers towards their stores. Retailers must setup entertainment themed stores for women so that she spends more time in shopping the apparel. Other facilities like parking, shopping space, classic environment and cleanliness are the expectation of professional women consumers. Retailers must adopt these facilities for their market profitability.

CONCLUSION

Before purchasing, the professional women consumers collect data from all sources regarding offers and promotion, environmental friendly product, store location or available facility that the apparel retailers provide. The women consumers prefer purchase of saree over other garment for pleasing appeal to the environment she belongs to. In general a woman starts her decision making with the vague idea with an open mind. Females are more of society associated with the public and are mentally more involved with shopping than men. The study regarding women buying behaviour is rapidly evolving and benefits the apparel retailers. Women decision making does not restrict with purchase for her but for whole family.

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SUSTAINABILITY ISSUES IN URBAN DESIGN OF ALOE VILLAGE: A CASE OF MANALI

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ABSTRACT

Urban design or pattern of a city or region is defined in terms of criteria that define the urbanscape of that area like landmarks, nodes, edges, boundaries, skyline of the area etc. therefore overall pattern or overall urban form is governed by presence of one of these or combination of more than one of these parameters /criteria. Similarly, absence of any of these also affect the overall aesthetics and visual perception of the users and tourists alike. This ultimately affect the tourism potential, development potentials and growth pattern in addition to the aesthetics of the city in terms of urbanscape. Unchecked urbanization on hills, with given /limited infrastructure facilities, availability of land and huge influx of tourists and floating population create not only degradation and breakdown of necessary services but also leaves unpleasing and unappealing visual aesthetic of the city. In present context, many hill towns like Shimla, Dharamsala, and Kullu-Manali to name a few are facing this vibrant problem whereby due to huge influx of floating population and tourists alike, not only basic amenities are overstressed but also the urbanscape is degrading very fast. Present research is an attempt to understand some urban design issues in context to sustainability and provide proposals for the betterment of the same which would be useful for planners and designers and policy makers at large to channelize the growth pattern of the area.

Keywords: urban sustainability, village, Manali, hill town, urban design

1. INTRODUCTION

Urban design is a complex process whereby many stakeholders related to sustainable urban planning and design are involved in addition to environmentalists, conservationists etc. which all together affect this interwoven pattern of urban criteria creating an urbanscape [1]. In line with the sustainable development principles, urban design complex pattern and related sustainability issues are seen [2]. This further guide to provided amicable solutions for achieving sustainable development even in unplanned urban growth patterns of a city [3]. Present research addresses urban design and planning strategies in light of sustainable development considering the case of Aleo village of Manali from historic point of view, present scenario and future proposals. At present there is need for integrating principles of sustainable development in the multi-faceted process of urban design [4]. This would not only address problems emerging due to rapid urban growth and huge influx of tourists in hilly areas but also help in improving urban aesthetics at the same time for enhanced visual place quality and perception of these hilly urban areas [5,6].

2. STUDYING URBAN PATTERNS: CASE OF ALEO VILLAGE:

Aleo is a small village located in Manali located in north-western Himalayas. It is known for its majestic hills, scenic beauty and interrupted and continuous stretch of green forest cover. Other research studies in the same area and the development plan of Manali confirms the huge influx of floating population and tourists alike [7, 8]. urban pattern of the village has been studies in terms of presence of nodes, landmarks as activity generators [Fig.1] which affects urban space of the area. This gives an idea about the present scenario of physical infrastructure facilities of the area and also about their present condition [9, 10].

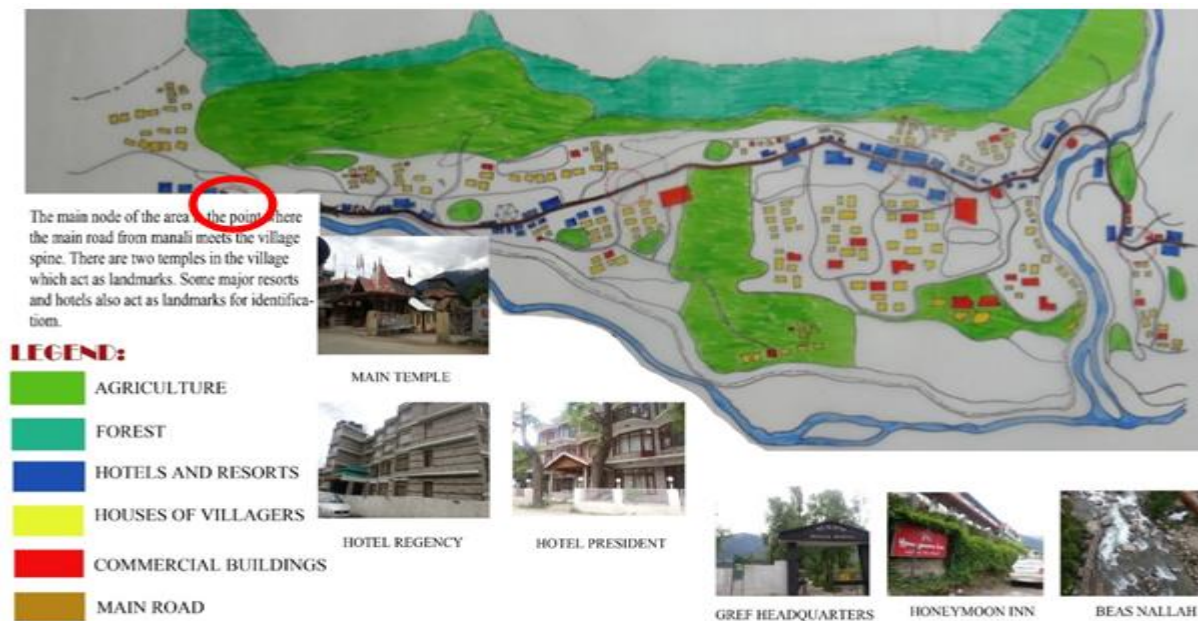


Fig 1. Presence of node, landmarks and activity generators as temples, resorts and hotels

3. ACTIVITY GENERATORS AND PHYSICAL INFRASTRUCTURE CONDITION

Presence of nodes and landmarks as two temples, resorts and hotels also act as activity generators which further attracts more tourists and floating population to suffice the growing needs of tourism industry in the area, this has created haphazard development and uncontrolled growth patterns in the area. Presence of hotels, and resorts however, also gives a sense to identity to the area as is recognised by the locals.

Many problems in terms of physical infrastructure have sprung up in the area like drainage, sewerage disposal, poor solid waste management, traffic and road hazards, signage problems etc. as shown in Figure 2. and enlisted in Table 1.



Fig.2 Present scenario of physical infrastructure facilities

Table 1. Physical infrastructure related problems

| S.No. | Parameter | Present status | Problem |
|-------|-----------|---------------------------------------|---|
| 1 | Drainage | Open drains are on both sides of road | Drains do not follow the natural slope, Lack of maintenance, presence of open drains is there |

| | | | |
|---|------------------------|---|--|
| 2 | Access | Presence of narrow pathway and Kutcha Roads | Width of the road varies from 3m-4m which creates bottlenecks at many points, creates accident prone zones, Creates problems for shopkeepers for loading and unloading of goods |
| 3 | Signage | No traffic and road signage is there in the area | No policy and framework to make area more user friendly for vehicular traffic, probability of accidents is high |
| 4 | Parking | Only one ground is available for parking near a hotel no demarcated parking space | Creates chaotic condition when 2-wheelers and 4-wheelers are parked on-road, Difficulty in pedestrian movement |
| 5 | Sewerage | Maximum houses don't have the sewerage connections | People relying on septic tanks and others similar methods leads to river pollution of Beas river |
| 6 | Solid waste management | No provisions of dustbins or municipal garbage disposal systems | People throw garbage in open and on public spots leading to unhealthy and unpleasing sights |

4. BUILDING MATERIAL AND DRAINAGE

Built masses in the area also have variation in the use of old traditional materials to modern construction materials which have been shown in Fig.3. Fig.4 represents the ownership status of the built masses in the area with status of drainage and sewage disposal.

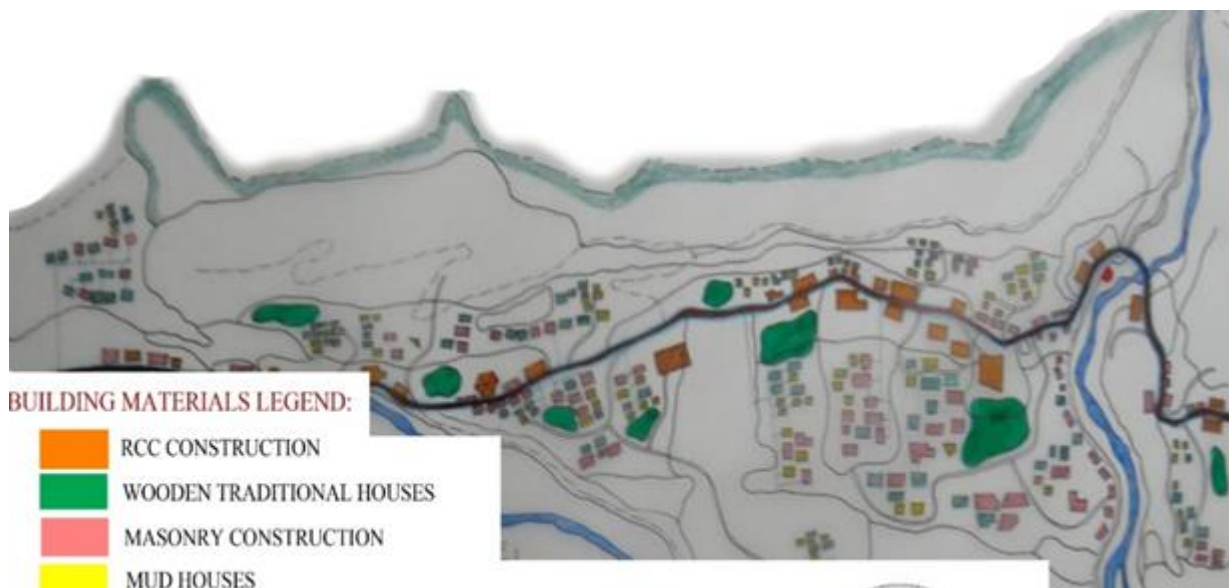
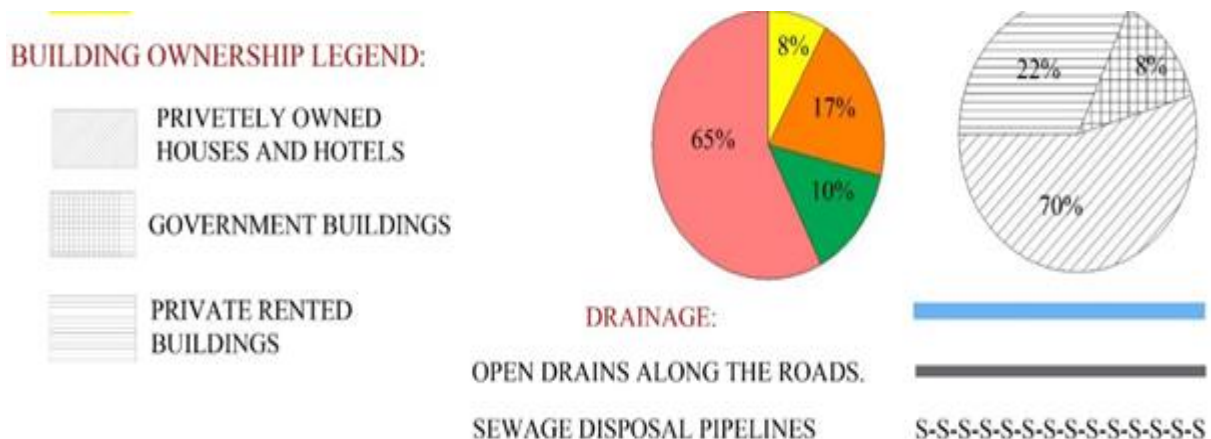


Fig.3 Building materials used in the area in built masses



Maximum house does not have sewerage connections/provisions of the same and they rely on septic tanks and manual disposal of wastes. Most of the houses have septic tanks which generate foul smell and unpleasing sight in case of overflow. These are cleaned by Municipal authorities but not on regular basis which again creates unhealthy conditions in the area. River pollution has become a major concern. There are many instances whereby river Beas is getting the defecated material disposed of into it, creating water pollution of the river Beas from where many drinking water supplies are connected.

Solid waste disposal:

Out of the total housing stock of the area, only 20% have dustbins. Remaining houses have no proper garbage disposal system. Nearly 63% of the houses generate less than 1 kg of garbage per day and 36% produce more than 1kg per day. However, in context of there is no proper arrangement for solid waste/garbage disposal.

5. URBAN DESIGN PROPOSALS

5.1 Parking and sitting spaces

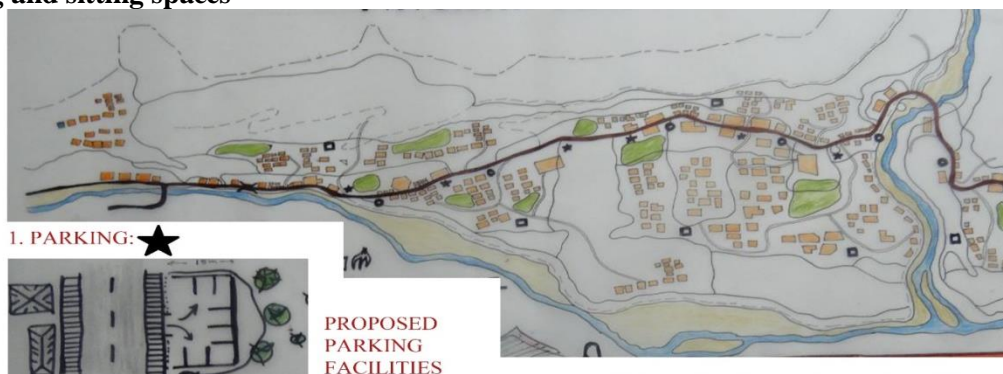


Fig.5 Proposed parking locations

In context to road side parking problems in the whole area, and lack of road side sitting spaces, parking can be provided at different locations as shown in the figure 5. Parking has been proposed for at least 25 cars, 85 buses. In addition to it ancillary facilities like 20 benches for convenient sitting for use by people also have been proposed to be installed at different locations. This would help on reducing roadside parking in crowded areas, filling the empty space along the roadside's, and provide resting and shelter space for the comfort and sight-seeing purposes.

5.2 Access and Water Supply

In context to poor condition of access and movement and lack of water supply, and absence of water tanks in the area, it is hereby proposed that easy connectivity should be provided connecting one part of the village to the another, good quality pedestrians should be made and provision shall also be made for regulating the supply of water with provision of water tank in the area to rectify the shortage of water supply in the area.

5.3 Garbage, Sewerage disposal and lack of signage

In context to poor garbage collection and lack of signage near crowded areas and junctions; it is vital to reduce scattering of garbage in open areas, parks and along roadsides. therefore 4-5 dustbins of appropriate size are required to be placed. In addition, for signage problem, sign boards, and electric sign boards are also required to be placed at different vital locations.

6. CONCLUSION

The research study has been conducted through survey, documentation and analysis of secondary and primary data to provide sustainable solutions for emerging problems in urban infrastructure thereby spoiling the overall urban scape to the beautiful area of Aleo village of Manali. The proposal mentioned herewith would be useful for planning, policy makers and designers alike for arresting the urban degeneration of the quality of the area both in terms of liveable conditions and visual aesthetics as well.

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A FAST FAULT DETECTION AND IDENTIFICATION APPROACH IN POWER DISTRIBUTION SYSTEM

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ABSTRACT

The purpose of this study is fast detection of faults. Power system faults and their results have been investigated to point out as to why fast fault detection is a necessity. The consequences of faults are reliant on various factors such as duration of faults. The significance of the speed of the flaw identification relies upon the sort of hardware used to clear the fault. A circuit breaker which interrupts currents only when they pass through a natural zero crossing might be less dependent on the speed of the fault detection than a fault current limiter which limits the fault current before it has reached its first prospective current peak. To have the option to identify an issue in a power system, the power system must be observed, i.e., estimations of applicable amounts should be performed so the shortcoming recognition hardware can acquire data of the condition of the framework. The fault detection equipment and some broad techniques for flaw recognition are momentarily portrayed. Some algorithms and their conceivable variation to fast fault detection are depicted. A typical rule of numerous algorithms is that they expect that either a signal or the power framework article can be portrayed by a model. Sample data is taken and fed to the algorithm for detection of faults and their evaluation

INTRODUCTION

To prevent people and property from damage or injury, electrical faults in a power system must be cleared fast. In the early days of electrical power systems the fault clearing was administered by the maintenance staff, who visually detected the fault and manually operated a switch to clear the fault. As fault currents became larger and the operating requirements of the electric power system became more stringent, the need for automatic fault clearance became a necessity. A typical fault clearing system consists of a circuit breaker and a relay protection system. The relay protection system consists of transducers, wiring, relay, auxiliary power supply, and the operating coil of the circuit breaker. In the early days of automatic fault clearing, a fault was detected by electromechanical relays[9]. The measured quantity, such as for example a voltage or a current, was transformed to a mechanical force which operated the relay when a preset threshold was exceeded. Following the advent of electronics such as transistors and operational amplifiers, solid-state relays were developed. The characteristic of such relays were implemented by circuit design. Today, new relays are normally numerical relays. They are built around a microprocessor in which the relay characteristic is digitally implemented. The analogue measurements are converted to digital signals for evaluation within the microprocessor[10]. The recent development of fast microprocessors has led to the possibility to implement highly sophisticated relay characteristics within the microprocessor[16]. The trend in protection relay seems to go towards so-called relay terminals which for example can contain all protection relay functions needed to protect a power transformer. This is opposite to a couple of years ago when it was necessary to have one relay for differential protection, one relay for earth-fault protection and so on[15].

The other main part of the fault clearing system is the circuit breaker. The operating times of circuit breakers have gradually been reduced, but since all circuit breakers are dependent on a current zero-crossing to interrupt the current, they can never protect the power system from the first peak of the short-circuit current[11]. Fault current limiters have been proposed and evaluated for almost 30 years by now. Recent research has proposed a number of installations of fault current limiters based on solid-state breakers or superconducting properties. Another approach to limit the fault current is to install a series reactor. Since it is easier to close a current path than to open it (provided that the switch is dimensioned for the mechanical forces that will stress the switch during the closing), the possibility to commutate a fault-current to earth at the source with an earthing-switch has been proposed. The possibilities of today to supervise and control a power system seem to be sufficient to allow such a solution. The required apparatus and the control system exist but a field installation is required to prove the design. The detection of faults is an essential part of the installation irrespective of whether a current-limiter or an earthing-switch is used[12]. Allowing for a mechanical operating time of a few milliseconds, faults must have been detected within one millisecond or so to allow the power system to be protected from the first peak of the fault-current. Assumption, distribution networks carry a large amount of power and therefore, the security and adequacy of power grids should be guaranteed [1-2]. Any disturbances in the generated power by the generation units may cause supply failure and power quality degradation. Reliability, costs of electricity, and protection of power distribution systems are some important criteria which should be taken into considerations by utilities for power system operation and planning objectives [3-5]. Fast restoration of the

faulty section, proper operation of protective devices, and precise classification of faults need to be considered to protect power distribution systems. Fault diagnosis of power systems can be classified into two groups: (1) Techniques which rely on measuring the line impedance after the fault. (2) Techniques which focus on measuring the generated signal by the fault. Accordingly, continuous monitoring of the voltage, current, impedance, etc. is required for quick restoration of power distribution systems after the fault and it improves the reliability of power networks. There are numerous research studies conducted on using different techniques for fault detection and identification in power systems[13,14]. Modified Multi-Class ENSEMBLE Support Vector Machines (MMC-ENSEMBLE) approach to detect and identify open-circuit faults in power distribution systems.

power system for protection against short circuits or abnormal conditions. There have been revolutionary changes in this field from electromechanical to numerical relays. With the growth in size and technology of power transmission systems the existing distributed methods are being driven to tight corners. Electromagnetic relays are almost obsolete. Static Relays are rigid and hence have lost their significance in the modern power system environment where system operating conditions are significantly different. The last decade saw an upsurge in the research in numerical distributed. These relays have numerous advantages with respect to decision-speed, accuracy, data storage etc. Most of these relays are based on the fundamental (50/60 Hz) component of the voltage or current. These components are estimated with signal processing algorithms from the distorted signals especially during faults and transients. Traditional protection schemes employing numerical relays are of fixed setting type which is determined primarily from offline system study. For better performance the adaptive form of distributed has emerged where the setting is changed online in accordance with the prevailing system conditions.

Different uncertainties present in the signal causes changes in current and voltage of the system. The available fixed setting relays will be a compromise in such an environment. With market driven power systems, the malfunction of a relay will result in high revenue loss which a power company or transmission agency does not desire. As transmission line and the connected equipments are operating close to their limits, an inappropriate distributed in these situations may result in cascaded failures and subsequent system blackouts. Therefore, the performance of a modern relay is vital.

The performance of a relay primarily depends on the sensors which provide the signals and the algorithm that derives the decision. The relay operates for the faults which fall under its trip boundary. Due to dynamic changes in modern power system, adaptive setting of relay is needed.

The application of signal processing techniques in traditional digital distributed schemes is primarily limited to the estimation of the fundamental components of measured voltages or currents. The existing distributed algorithms employ methods involving discrete fourier transform, recursive least square and Kalman filter to extract the voltage and current phasor [1-2]. These values are used to calculate the positive sequence component of impedance determine the distance relay trip boundary. Several authors have suggested adaptive schemes to improve relay operation under variable system condition. Fault location can be calculated using computing techniques [3-4]. In [3] fundamental component of voltage and current have been used whereas discrete data are considered as input in [4].

LITERATURE REVIEW

GK and Jasper [1] incorporates the Smart Home EMS utilizing the Multi-Output Adaptive Neuro-ANN Inference System for the effective performance of energy storage devices, the integration of renewable energy, and the scheduled equipment. The control system trade surplus energy between consumers or may defer or interrupt scheduled appliances and, thus further decreasing the cost of electricity and reverse power flow. The method is tested with daily data on temperature, insolation, wind speed, controllable, and uncontrollable electricity and the cost of electric power as inputs to confirm the findings. The outcome of the system defines how and when to manage the electricity production, scheduling, and consumption of the equipment. As a result, energy bills reduced by 57.62 percent, highest point power consumption decreased by 44.4 percent and the peak-to-average ratio decreased by 73.6 percent due to the adoption of the suggested plan.

Khanna et al. [2] Evaluate the impact of the proposed DR-strategy on households situated in the west Isle of Wight (Southern UK). Roughly 15.000 households are located, from which 3000 really aren't linked to the gas network. Using only a distribution system model including a power systems software tool, the secondary voltages, and the apparent power via the transformers only at appropriate substations have been measured. The findings demonstrate that in summer, participating households could export near to 6.4 MW of power, which would be 10% of the configured large-scale PV capacity mostly on the island. Households participating could

achieve significant CO₂e i.e. carbon dioxide equivalent reduction of 7.1 ktons / annum and a decrease of 60 percent/annum in combined energy/fuel transport.

Urbano and Viol [3] describe the VPP idea as a solution to the problems of future energy markets. The potential energy situation has been analyzed with regard to demand, energy prices, and renewable generation, and artificial intelligence approaches were determined to be better adapted for the specified intent. The internal energy assets were designed using an EH. The VPP is designed and can be optimized by adding certain factors.

Ruzbahani et al. [4] suggested IDRO i.e. Incentive-based Demand Response Optimization model to effectively schedule home appliances for minimum use throughout peak hours. The current technique is indeed a multi-objective optimization method that is based on the NAR-NNN, which takes account of energy supply from the PV frame mounted on the rooftop and the utility. 300 research findings (household) are used to validate and evaluate the hypothesis process. For a period of 1 year, data analysis reveals a significant enhancement in customers' billing and the power factor.

Khan [5] discusses the potential of this energy-saving action mostly as a DSM technique for the least advanced economies, especially focusing on Bangladesh. The findings show that energy-saving actions may reduce energy requirements by up to 21.9 percent. Nevertheless, this possible DSM scheme appears to be overlooked in Bangladesh's regional DSM program. Bangladeshi Energy Efficiency and Conservation Master Plan (EECMP) helps to enhance efficiency in use of household appliances that can minimize energy needs in the domestic segment to around 28.8%, however, this takes longer to be accomplished, and include energy-saving behavior just a DR strategy in the housing applications together with the EECMP and a reduction of up to 50.7% in demand could be achieved.

Ponds et al. [6] addresses the concept of DR aggregator in the successful incorporation of DER technologies mostly as modern energy source power into electricity grids utilizing technological information management and industrial expertise. Depending on DR aggregators, this system would effectively promote the incorporation of renewable energy and consumer participation in the electricity sector. To this end, the benefits and drawbacks of DR aggregators are analyzed in this paper from points of PEST i.e. political, economic, social, and technological. Based on this analysis, SWOT (strengths, weaknesses, opportunities, and threats) analysis of the traditional DR aggregator is described.

Xu et al. [7] provides a standardized user interface for designing operating systems, that are introduced in terms of implementation, design, and evaluation. To guarantee how the user interface could be adapted flexibly to specific kinds of buildings, we develop a set of standardized data models that are exclusive of constructing an operating system. In addition, the article often contains three functions with separate permissions and a variety of usable components of the user interface. A prototype of such a standardized interface called Building Operating System User Interface (BOS UI) has indeed been developed to run the Energy Smart Home Lab (ESHL) at the Karlsruhe Institute of Technology (KIT). Analysts analyze the architecture, usability, and functionality of BOS UI both quantitatively and qualitatively.

Shareef et al. [8] offers a thorough overview of past and present HEMS-related work by evaluating multiple DR systems, load scheduling controllers, and smart technologies. the application of AI to load scheduling controllers, like ANN, adaptive neural ANN inference, and ANN logic framework, is also examined. The strategies based on Heuristic optimization are commonly used for efficient scheduling of different electrical equipment in home automation are often addressed.

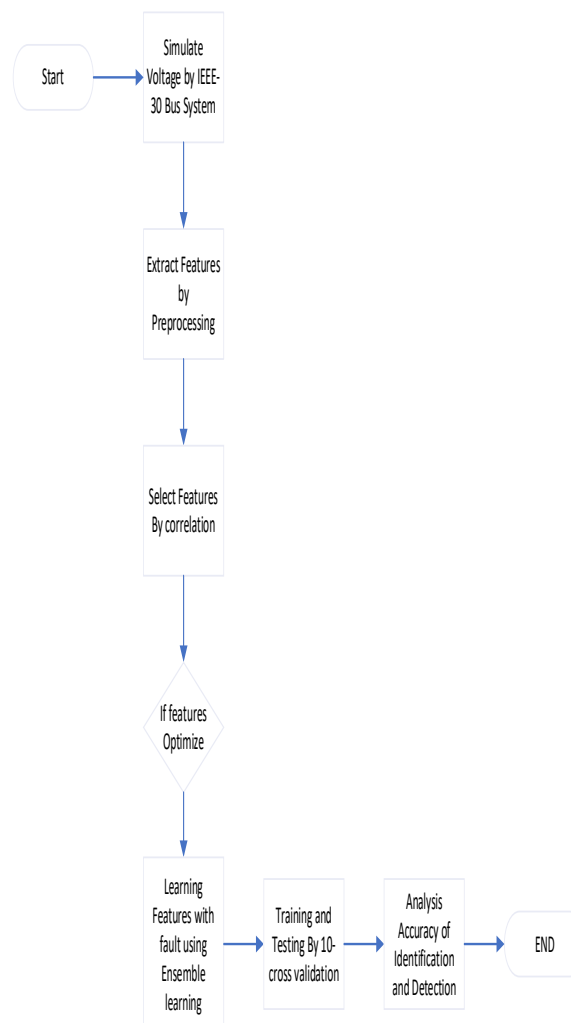
Martirano et al. [9] proposes a viable model of architecture for technical building systems (TBS) particularly effective for nearly zero energy buildings (NZEBs). The proposed model integrates consumers across the electrical node in order to satisfy the threshold level of electric energy and to obtain a much more flexible and virtuous cumulative profile of load. The current proposal is indeed a complete electrical common microgrid with a simple connection point, with heat and household water heating provided by a central electric heat pump. Renewable energy is supplied by a PV system linked to a local grid. The industrial automation control regulates the electrical TBS, which modulates the global building DR load. The success of the developed framework lies in the use of temperature change as power storage by pushing both central and local heating and air conditioning devices.

Mortaji et al. [10] suggests the use of a load shedding algorithm and an S-DLC, namely, smart-direct load control to decrease the peak-to-average ratio and minimize outages in unexpected grid load changes. The technique requires modeling, shedding, and S-DLC. This also utilizes the IoT and stream analysis the aim of providing real-time load balancing and produces a regular schedule for consumers fitted with smart electronic

devices centered upon their thermal comfort, demands, and the planned load pattern. DR methods are used to monitor and optimize loads in real-time. A simulation program has been developed to check the algorithm, taking into consideration 100 respondents possessing randomly chosen appliances. The analysis indicates that load shedding that used a self-regressive integrated moving average time-series model approach and the application of S-DLC and the IoT could significantly reduce the power outage of customers.

Tomsovic and Asadinejad [11] not just reduce costs and boost reliability, but also improve customer adoption of the DR system by reducing rising prices. TOU services are known to be a price-based system planned to use a monthly off-peak and peak tariff. In the case of an incentive-based DR, an innovative procedure is presented, in relation to the estimation of an acceptable, the best time for the DR, and a fair amount of load change for an incentive to be realized is identified. Such an optimal threshold significantly increases the gain given the consumer comfort level as a limit. Studies from the reduced model of the WECC indicate that the existing DR system offers substantial benefits both for the reductions and loading services (LSEs) in the purchase of energy by the user.

Khanna et al. [12] examined the thermal efficiency of dye-sensitized and perovskite solar cells under operational conditions and contrasted to solar monocrystalline silicon cells. Impacts of wind speed, wind patterns (wind azimuth angle), solar radiation mostly on the temperature, the performance of its cells, and the tilt angle of the panel have been presented. for The results indicate that as the azimuth angle of the wind rises from 0 ° to 90 °, for monocrystalline silicon, the cell pressure rises from 51.8 ° C to 58.2 ° C, for perovskite from 45.5 ° C to 50.7 ° C and for dye-sensitized solar cells from 48.4 ° C to 53.9 ° C, and for monocrystalline silicon, the corresponding efficiency of the cell decreases from 22.3 percent to 21.5 percent, and for dye-sensitized solar cells it decreases from 20.1 percent to 53.9 ° C.



Proposed Work Flow

9. Input IEEE-30 bus system with normal load and extract parameters by newton Raphson approach.

10. Optimize the parameters and generate features for learning different faults.

11. Improving the learning by ensemble learning, training and testing by cross validation.
12. In cross validation run training and testing 10 times and take average accuracy.
13. Above four steps run on all three faults on different noises.

| FAULT | FL | | FS | | FT | |
|-------|----------|--------------|----------|--------------|----------|--------------|
| Noise | Ensemble | MMC-ENSEMBLE | Ensemble | MMC-ENSEMBLE | Ensemble | MMC-ENSEMBLE |
| 90 | 99.32 | 98 | 99.12 | 99 | 99.3 | 99 |
| 30 | 99 | 97.23 | 99 | 98 | 99.34 | 98.13 |
| 20 | 98 | 95.12 | 98.34 | 97 | 99 | 96.23 |
| 10 | 96 | 94.23 | 96 | 95 | 98 | 95 |

Table1 Results of Detection Analysis

In table 1 show the results of Proposed ensemble leaning and existing MMC-ENSEMBLE approach. Both approaches comparison on the basis of different noise and three faults FL,FS and FT. different fault Detection and Identification improve by proposed ensemble approach and reduce by existing approach.

| FAULT | FL | | FS | | FT | |
|-------|----------|--------------|----------|--------------|----------|--------------|
| Noise | Ensemble | MMC-ENSEMBLE | Ensemble | MMC-ENSEMBLE | Ensemble | MMC-ENSEMBLE |
| 90 | 99.16 | 97.61 | 98.91 | 97.11 | 98.115 | 97.25 |
| 30 | 98.5 | 96.175 | 98.78 | 96.48 | 97.78 | 96.66 |
| 20 | 97 | 94.67 | 98.5 | 95.61 | 97.17 | 96 |
| 10 | 96 | 94.23 | 98 | 95 | 96 | 95 |

Table 2 Result of Identification analysis

In table 5.2 show the results of Proposed ensemble leaning and existing MMC-ENSEMBLE approach. Both approaches comparison on the basis of different noise and three faults FL,FS and FT. different fault Identification improve by proposed ensemble approach and reduce by existing approach.

comparison of FT and FS fault identification by ensemble approach and MMC-ENSEMBLE approach .n ensemble approach FT and FS default accuracy increase average 2% .its show proposed approach improve the identification because of ensemble of different classifier.

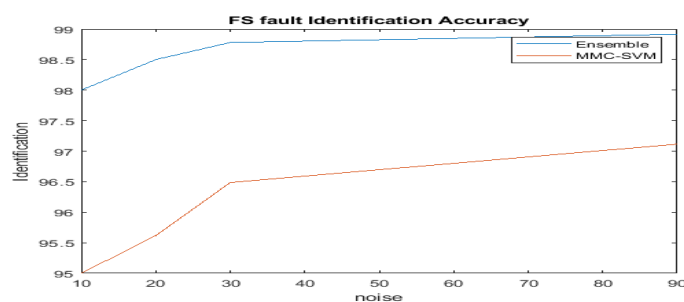


Fig 1 Comparison of FS fault Identification By Proposed (Ensemble) and Existing (MMC-ENSEMBLE)

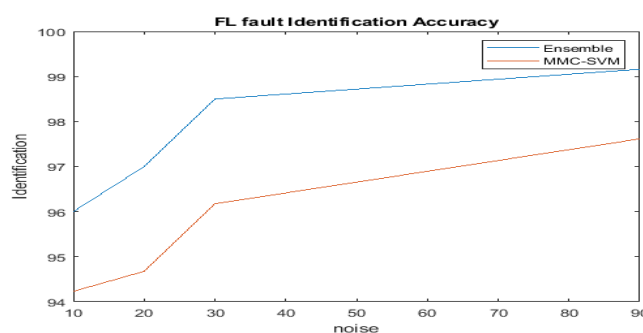


Fig 2 Comparison of FL fault Identification By Proposed (Ensemble) and Existing (MMC-ENSEMBLE)

In figure 2 comparison of FL fault identification by ensemble approach and MMC-ENSEMBLE approach .n ensemble approach FT default accuracy increase average 3.2% .its show proposed approach improve the identification because of ensemble of different classifier. In 5.16 FT fault detection accuracy improve by ensemble method by 4%

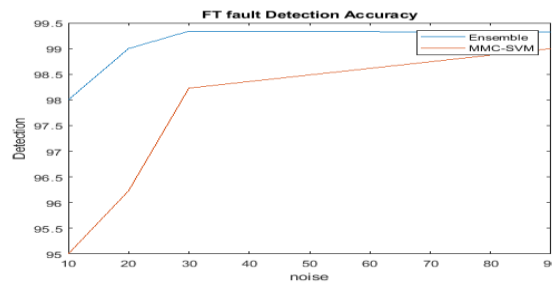


Fig 3 Comparison of FT fault Detection By Proposed (Ensemble) and Existing (MMC-ENSEMBLE)

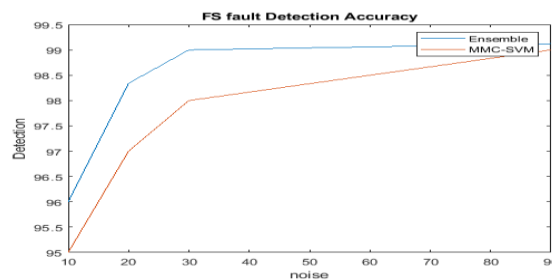


Fig 4 Comparison of FS fault Detection By Proposed (Ensemble) and Existing (MMC-ENSEMBLE)

In figure4 comparison of FS fault identification by ensemble approach and MMC-ENSEMBLE approach .n ensemble approach FT default accuracy increase average 2.2% .its show proposed approach improve the identification because of ensemble of different classifier. In 5.18 FL fault detection accuracy improve by ensemble method by 3%

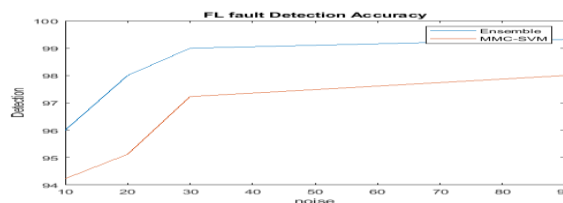


Fig 5 Comparison of FL fault Detection By Proposed(Ensemble) and Existing (MMC-ENSEMBLE)

CONCLUSION

Transmission line protection is obligated to perform better in the current scenario of restructured and market driven power system. The introduction of power electronics devices for power flow control in a line and the nonlinearity introduced by various devices are other challenges for line protection. In this context, the investigation explores improved solution to transmission line protection and contributes in all the three basic components of the distance relaying algorithm.

The other significant attributes of the proposed strategy are gathering countless features, applying feature determination technique to eliminate the superfluous and repetitive features and as needs be improving the expectation exactness, considering distinctive flawed situations to build up the train and test information networks, and in conclusion all the while recognizing and distinguishing open-circuit shortcomings. The preparation time is extremely short with the proposed Ensemble Learning strategy. The proposed technique is tried on the IEEE 30-hub test framework considering brief open-circuit blames in MATLAB programming. The recreation results uncover the exactness, adequacy, and strength of the proposed technique. The simulation results reveal the accuracy, effectiveness, and robustness of the proposed method.

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COVID-19 AND PROBLEMS IN TEACHING AND LEARNING THAI LANGUAGE IN ELEMENTARY SCHOOL, THAILAND

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ABSTRACT

This article aims to study the problem of the epidemic of a new strain of virus (Covid-19) that affects the teaching and learning management of the Thai language at the primary level. Because the Thai language is the basis for building on all subjects, if students cannot read and write, they cannot understand other subjects. Especially in areas with educational disparities, many families do not have the equipment to cover their students online learning, even though teachers use techniques to convey Thai content through online systems, students still face four problems as follows: (1) Internet signal problems, (2) Content broadcasting problems, (3) Problems in changing teaching methods according to the policy of the educational institutions, and (4) The problem of politeness is the reason why the students read and write Thai language does not meet the standards of the curriculum.

The author synthesizes the body of knowledge from research papers, news articles, and related documents, summarizing the approaches to solving the problems of teaching and learning management in elementary school Thai language as follows: (1) Educational institutions should cooperate with parents. (2) Adjust the method of distributing the work of teachers to suit the learners. (3) Encourage the production of teaching and learning materials and innovations that help students to read and spell until they can read and write. (4) support teaching equipment or budget for teachers and learners. (5) Measuring and evaluating with a variety of formats, especially in practical courses. And (6) Encourage educational institutions to self-assess before school starts to prevent the spread of COVID-19, in which each area has different risks.

Keywords: Covid-19, Teaching and Learning Management Problems, Thai Language Subject, Primary School.

INTRODUCTION

Due to the outbreak of the novel coronavirus (COVID-19), schools have issued several rounds of opening and closing orders, requiring those involved to follow the agency's announcement and apply guidelines for educational institutions to treat COVID-19. -19Thailand. However, the Ministry of Education has a policy during the Covid-19 period that "school can be stopped but learning can't be stopped", Although the Ministry of Education has imposed a holiday cancellation policy to compensate for lost time, the cumulative absences will affect students in the long term.

From the research results of Thongliamnak, P. (2020); Thai BBC News (2020) An expert in Educational Economics, the Research Institute for Educational Equity analyzed the results of the Organization for Economic Co-operation and Development (OECD) survey, together with the Harvard University School of Education surveying ICT data. 15-year-old students, numbering over 600,000, from 79 countries around the world, as of 2018, including Thailand with a sample survey of 8,633 students, from 290 schools. About 81.6% of Thai students aged 15 have access to the Internet, But only 57% of the students in the poorest group were able to connect to the Internet at home. Mobile phones such as smartphones and televisions are accessible to most Thai children, but among the poorest 20% of children, there is not even a mobile phone.

Thus, Kenan Foundation of Asia (2020) analyzed and summarized three issues as follows; 1) More inequality and inequality in education that may increase, gaps between access to education and availability of learning supplies, In which some learners may not have a computer to study through online channels. 2) The efficiency of teaching and learning is insufficient, where the efficiency of the online teaching system or e-learning is not enough. Few teachers are knowledgeable in the use of technology in teaching, In addition, there may be a lack of techniques for teaching online, causing learners to get bored and students lack practice opportunities. And 3) The system to promote and support online teaching of teachers is not enough, In which teachers are not sure how to start teaching online, how to track learning progress, and evaluate educational achievement?

Teaching and learning the Thai language at the elementary level is important, especially in elementary school. Because it is a group of learners that are connected from kindergarten level, are not proficient in using technology, do not focus on learning much, require parental cooperation, which parents have their workload. In normal situations, problems in literacy and writing in Thai subjects were analyzed from the research on conditions and solutions for reading, spelling, and writing problems of primary school students in schools under the Bangkok Education Bureau (Chuapetch, N., and Klaimongkol, Y., 2018) Summary of problems in teaching

reading, spelling, and writing of primary school students in schools under the Bangkok Education Bureau are as follows: 1) Teachers who teach Thai language in elementary school (Grade 1-3) do not teach Thai language but are assigned to perform other duties in school. 2) Teachers who teach the Thai language in elementary grades (Grades 1-3) did not graduate with a major in Thai language and therefore do not know the principles of teaching the Thai language. 3) The students admitted to the school have a variety of problems, such as being the children of foreign workers, having a slow learning condition, being a special child, both with and without a medical certificate. 4) The time that teachers can spend on reinforcing children who cannot spell and write is limited because there are many internal and external workloads. And 5) Lack of activities to promote reading and spelling in schools due to budget, staff, and time constraints, as well as awareness of existing problems.

For Thailand, Pinyosinwat, P. (2020) suggests guidelines for solving teaching management in the Covid-19 situation that it should not only solve problems immediately in the situation of Covid-19 but should "turn crisis into opportunity" to improve teaching quality. Therefore, learning in Thailand should not only adjust the learning process in the classroom but also need to adjust the learning system that must be consistent and connected with children's learning. It should be done as follows: 1) Tighten the curriculum, adapt it to the COVID-19 situation and communicate it to all involved parties. 2) Increase the flexibility of the structure of the study time and the variety of learning styles. 3) Design a learning unit and teach with an appropriate plan. 4) Raise the level of evaluation for development (formative assessment) so that children do not lose the opportunity to develop knowledge and skills. And 5) Assessment for accountability should still be considered, but the assessment of children's educational opportunities should be given more weight than the assessment of their knowledge by test scores.

From the aforementioned situation, the author aims to analyze the problems of teaching and learning the Thai language at the primary level in Thai society during the Covid-19 situation to reflect the solution, especially for students who cannot read, write. Not anymore. When there is a need to study online, the problem can escalate or affect other courses. This reflection of problems and proposed solutions can be integrated with teaching and learning management in other subjects and can be applied to teaching and learning management in the COVID-19 situation with various countries.

Objectives

1. To study the problems of teaching and learning the Thai language at the elementary level in the situation of the epidemic of a new strain of virus (Covid-19).
2. To present guidelines for teaching and learning the Thai language at the primary level in the situation of the epidemic of a new strain of virus (Covid-19).

Results

The authors synthesized knowledge from research, news articles, and related papers. Suggestions for solving problems in teaching and learning the Thai language at the elementary level in a variety of techniques. The situation with the epidemic of the new strain of Covid-19 has made the management of Thai language teaching more difficult as the Center for Covid-19 Situation Administration has scheduled to open the academic semester on July 1, 2020. In the beginning, educational institutions had to adjust greatly, teachers adjusted to teach both online, offline, and blended learning (Blend Learning). The learners live with their families, the approaches to learning in elementary school need to coordinate with parents, as students cannot interact directly with learners.

The teaching management model to be consistent with the new normal consists of (Wongyai, W., and Patpho, M., 2020);

1. 100% online learning: This model is suitable for schools that are ready in terms of teaching and learning systems and curricula. For online learning, learners are ready to learn online and parents are ready to provide support, including learning support tools such as notebook computers, tablets, and students. Smartphones, and the Internet
2. Classroom learning is suitable for schools with a small number of students and enough space to comply with social distancing policies. Distancing) and rigorous hygiene cares for students, along with requiring all students to wear masks and to regularly clean their hands with alcohol. In addition, schools must disinfect all areas in the school regularly to prevent the spread of the covid-19 virus again.
3. Online and offline blended learning is suitable for large schools with large numbers of students and no previous experience in teaching online learning. Therefore, students should be divided into 2 groups to alternate days for students to come to school 2 days a week each. while the remaining 3 days allow students to attend online classes from home. For the students to come to school, the school can arrange teaching in a classroom

that maintains a distance, as well as to be able to take care of intensive student hygiene and for effective learning, it is recommended that the school choose subjects that There is the practice or having to work together to organize classes in the classroom, while other subjects allow teaching via online as appropriate.

4. Home School: This type of teaching is expected to increase in Thailand as parents may be concerned about the safety of their children from disease, pollution, and other threats. Parents will play the role of teaching and learning in a format that is suitable for the learners, which may be an online course along with organizing a specific teacher to teach at home to meet the learning style of the child to apply. with the curriculum of the Ministry of Education. Home Schooling is suitable for children with special needs and children with congenital diseases that are at risk if they have to go to school.

Online teaching and learning management in the digital era must develop the ability to use innovative content creation (content), In which teachers and students can design content using computers or smartphones. Although the age gap between the media producers, teachers and parents, are in different age ranges than primary school students. Young learners, especially upper-primary students, are familiar with using smartphone literacy devices, whether playing games, using social media, receiving information. Presenting news through social media is not focused on long messages because they are boring. Every medium has modernized the way of presenting with the use of images or video clips. Thai teachers need to make a big adjustment in teaching management in the situation of COVID-19. Because the content of the Thai language is a traditional science that is solemn, has standards and rules, both language and literature need to adjust the format to keep up with the modern era for learners to be interested in following, learners like to look at pictures, love fun to learn. It's easier to know and remember. And most importantly, the teacher is the most important medium for conveying the content.

because it helps to attract learners to remember and create a more exciting teaching atmosphere.

Poompao, P. (2021: 395) summarizes the guidelines for applying Thai language teaching in a new way of life amid the Covid-19 crisis as follows;

1. Factors that lead to learning in a new way of life, changing to a new life in the Covid-19 era, Thai teachers have to make a huge adjustment to the evolutionary change according to the progress and Technology growth. Although there is no COVID-19 outbreak, education is changing with the times, the emergence of technology that transforms the physical (Physical) Objects converted to digital objects (Digital Objects)

2. Adjusting the learning process to be consistent and connected with teaching the Thai language in a new way of life so that the learning process is consistent and linked to teaching the Thai language in a new way of life.

Teachers have to adjust the attitude that we can turn every place into a school because learning must continue, even if students can't go to school normally. Therefore, distance learning is required with various forms based on the conditions of equipment readiness, parental readiness, and age range of learners.

3. The application of learning theory to teaching the Thai language in a new way of life. While applying the learning theory to teaching Thai in a new way of life is important because most of the teaching Thai language in the COVID-19 era is online, teachers must have a teaching process that is appropriate to achieve the objectives following the set learning management plan, Including students to cooperate in participating in learning activities all the time.

4. How to teach the Thai language in a new way of life for seamless learning, It is very important to design Thai teaching following learners' learning in a new way of life. How can teachers make online learning during the COVID-19 crisis for learners to learn? to the fullest

5. Ten things that Thai teachers should consider in learning design for a new life era Thai language teaching in the Covid-19 era, each school has different learning styles, mostly online learning, but Medium and large schools have rotational arrangements for classroom and homeschooling.

Teaching Thai in the Covid-19 era, each school has different learning styles, mostly online, but medium and large schools have rotation arrangements to study in the classroom and study at home. The study summarizes 10 guidelines and precautions for teaching Thai that teachers must consider learning in a new way of life as follows; (Happinet Club, 2020: online; Poompao, P., 2021: 400).

1. Don't spend a lot of worksheets on your parents because the parents already have a lot of workloads.
2. Design problems to create new learning so that students can participate in learning with a wider scope.
3. Make COVID-19 a learning opportunity, not just a break.

4. Separate online learning and screen learning, teachers should understand that all online learning, not screen learning, and that all distance learning does not have to be online.
5. Provide supplies to parents who are in need, here does not mean digital tablets, but refers to black pencils, pencils, paper glue, tape, glue, books, magazines, etc.
6. Develop strategies for “passing” children, these children are most at risk as they may have illiterate parents, parents separated because of conflict, or living together in a very crowded manner. Therefore, teachers should pay attention and design learning with this group in mind.
7. Emphasize the teacher's attention to resources and time to be used with the children who need it most, should pay attention to the amount of content, time, and teacher support in teaching to high-risk children, who are students who need Try hard to learn.
8. Aim to support students with academic and emotional difficulties such as teachers calling parents and students one by one, emailing them to make personalized study plans, maintaining personal relationships through LINE or other platforms whenever possible.
9. Make communication inclusive of all types of students and families, making communication widely available is not just something that is done only when things are going well, and when there is free time.

Rather, it should define how we should communicate with someone at all times.

10. Rank the groups of learners at the highest risk to start learning first, Schools should therefore begin the academic calendar year earlier, shifting the time previously taken for teachers to use “normal” professional development to deal effectively with students placed at the highest risk groups. Teachers must have a professional commitment like a health worker to help different groups of children with different needs to learn together.

From the analysis of the situation of the epidemic of the new strain of COVID-19 and various researches. Summary of problems and solutions for teaching and learning management of Thai language subjects at the elementary level are shown in the figure.

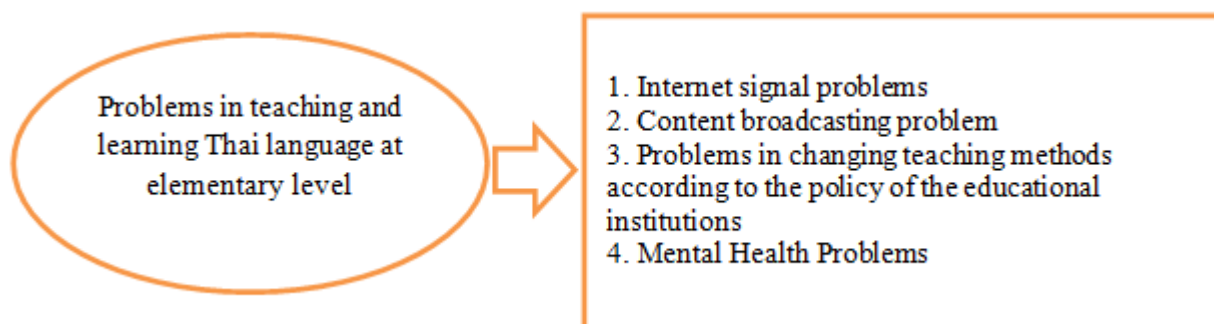


Figure 1: Problems of teaching and learning management in the Thai language at the elementary level

Teaching and learning management in the situation of COVID-19 through various technology platforms that are suitable for learners, but encountered various problems, as detailed below

1. Internet signal problems: As a result, teaching is not on schedule, so teachers should always find a backup solution. When students can't stay in the system all the time, learners may feel bored coupled with early childhood, primary school is the age where you are unable to control your emotions or have the patience to try to enter the system. There are also activities at home as a stimulus that distracts the learners from the situation such as playing games, watching cartoons, etc.
2. Content broadcasting problem: Since linguistics is a science that requires both a science and an art to convey content, teachers should simplify difficult subjects, reduce complex content to short, simple, and entertain students.
3. Problems in changing teaching methods: According to the policy of the educational institution, when the Covid-19 situation unfolds, teachers have to go to the school to teach groups of students according to the school's policy. When the situation intensified, it had to be adjusted to teach online. Therefore, the use of mixed teaching styles is a solution that allows both teachers and students to acquire knowledge in various unsettled situations.

4. Mental health problems: Both the learner and the teacher are unfamiliar with the situation, so adjusting to survive in everyday life is quite difficult. The attention or commitment to learning to pass as expected as in the classroom can be difficult especially for elementary school children. Therefore, teachers need to rely on cooperation with parents and develop teaching materials to relax.

From the problems of teaching and learning the Thai language at the primary level in all 4 issues, it leads to a solution to the problem of teaching and learning the Thai language at the elementary level as shown in the picture.

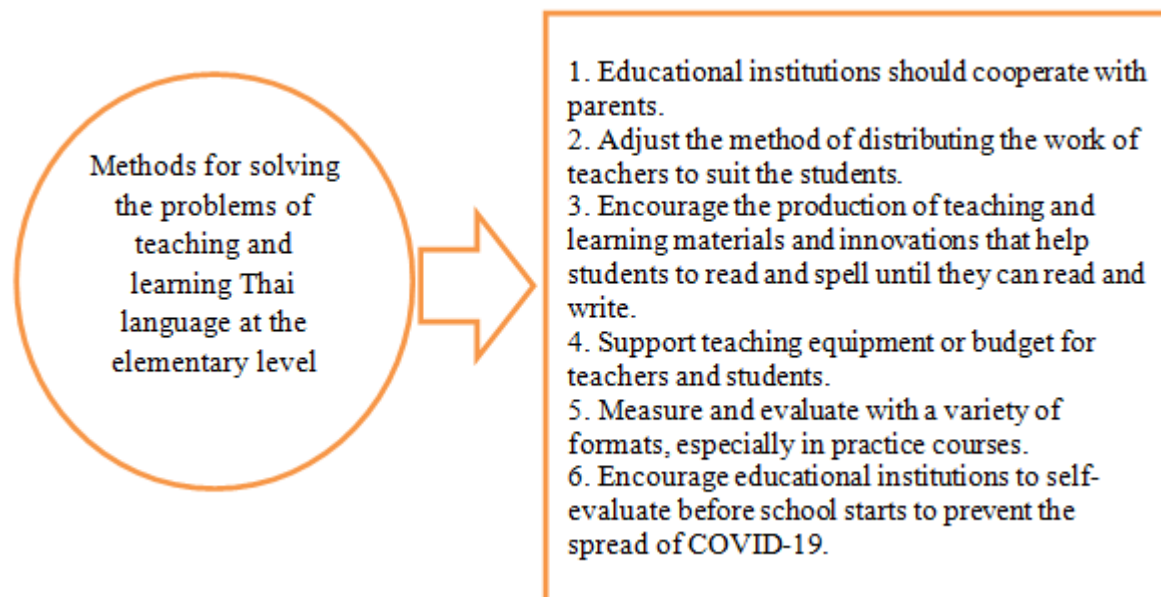


Figure 2: Approaches to solving problems in teaching and learning the Thai language at the elementary level

Guidelines for solving problems in teaching and learning the Thai language at the primary level can be summarized in 6 items as follows:

1. Educational institutions should cooperate with parents to ensure smooth teaching and learning during offline, online, or mixed classes. Because parents are close to students, if they want to follow up on homework, or make an appointment for the exam date, or have them pick up and send worksheets at school, they can coordinate easily and quickly. Communication with parents may be done by creating a LINE chat group to communicate properly.
2. Adjust the method of distributing the work of the teachers to suit the learners. Teachers should adjust the selection assignments for only the necessary tasks that can be measured according to the indicators. Because online teaching takes more time to explain than teaching in a classroom where students can interact with each other. And special tutoring on a case-by-case basis to control teaching and learning with a large number of people to flow in the first class, if some special children or students cannot read and write, should consult the school to separate teaching hours separately from normal students.
3. Encourage the production of teaching and learning materials and innovations that help students to read and spell until they can read and write. Producing media that stimulates the interest of learners all the time, maybe made in the form of video media on YouTube network, creating a variety of content such as storybooks, games to stimulate learning and gain knowledge like Not very strict in the rules.
4. Support teaching equipment or budget for teachers and learners. Teaching management in the situation of COVID-19 will incur more costs for all parties, reducing tuition fees, promoting educational materials, or supporting the Internet is important because it will help ease the burden of parents in another way one too.
5. Measure and evaluate with a variety of formats, especially in practice courses, if there are practical courses that need to do activities on important days or produce work that requires teacher assistance, it can be converted to online activity in the social world.
6. Encourage educational institutions to self-evaluate before school starts to prevent the spread of COVID-19, as school districts have different severity of the COVID-19 epidemic. Therefore, the implementation of the policy

of the competent authority may be achieved through negotiation for the safety of all parties involved. And should follow the precautionary measures to prevent and control the COVID-19

CONCLUSION

Gagne's Theory of Instruction describes 9 teaching principles for learners to interact with their teachers as follows: (True Plowing Wisdom, 2020)

1. Gain Attention: Before introducing them into lessons, teachers should arouse the attention of difficult learners by setting up an environment or using teaching materials to attract learners.
2. Specify Objective: Teachers need to inform students of the objectives, expectations, and what they should be able to achieve at the end of the lesson. By knowing the objectives of the lesson in advance, learners can focus their attention on the content of the lesson in the relevant or necessary areas.
3. Activate Prior Knowledge: to review and test students' prior knowledge before beginning to introduce new knowledge content, which the model of reviewing and testing the previous knowledge before starting to present the content can be done in a variety of ways, whether it is a question-answer, asking students to do a Pre-test, or for students to group and discuss the content they have already learned, etc.
4. Present New Information: Teachers should present the content of lessons that are new knowledge through the use of learning materials that are diverse and suitable for the learners and taking into account the learners as a priority to stimulate learners' interest and learning.
5. Guide Learning: Teachers must guide students to combine new knowledge with previous knowledge that students have learned a lot so that learners can learn quickly and with greater accuracy.
6. Elicit Response: Teachers should organize teaching by encouraging students to have opportunities to think and do activities together to promote learning of the content, which will help learners remember the content better.
7. Provide Feedback: It is imperative for teachers to periodically inform learners where they are studying in the lesson and how far from the goals they have set, This will arouse more interest from learners. If they know where they are and what goals they need to reach.
8. Assess Performance: At the end of the lesson, teachers will have to test their knowledge (Post-test) to allow students to test their knowledge. And at the same time, teachers will know the level of knowledge of the learners in learning that lesson, which will enable teachers to encourage and develop additional learners appropriately.
9. Review and Transfer: Summarizing and applying is considered to be an important part of the final step as teachers must summarize the lesson on specific key points. Including suggestions for students to review their knowledge after the study lesson. And at the same time suggesting relevant content or providing additional references for learners to study in the next lesson or apply to other tasks.

If we consider Gagne's Theory of Instruction, which describes that instructional management must be a system for all 9 items in. In the situation of online teaching, if teachers and students have problems, especially in the case of unstable signals, learners can learn on their own. Studies have shown that the teacher is the protagonist who controls the entire learning environment, plays the role of a family member who helps informal knowledge, goodwill helps the learner build trust and be able to consult on any matter. Especially in such a crisis, if Thai language teachers use solemn methods, the more students do not want to study, may escape from the online classroom. What makes learning laughter and gaining insights is that the teacher is a model of informality, helping to provide knowledge of the subject matter. And the teacher can control the class like a good friend, it greatly inspires elementary school students.

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ROLE OF MFIS IN EMPOWERMENT OF RURAL AREA – A CASE STUDY OF SAGARA TALUK, SHIMOGA DISTRICT

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ABSTRACT:

Today, women are busy running in the presidential campaign. The work force is covered with intellectual women who currently hold the CEO positions at large companies which were never held by Indian women in long ago. In our country, women have reached a long way eventually and have discovered a new path for them to come. Women rights are human rights. The concept of feminism is very vogue. Feminist usually deals out balking attention. Women's right and changes effort to win equality for women have containing women's suffrage, feminism, women's property rights, equal opportunity in work and education, and equal pay. These things showing that urban area women are not facing much problem for gender discrimination or any other problems as like rural women's, actually in the present situation rural women are coming forward to become an independent in all the areas. Even this is helping them to become socially and economically empower which is necessary for them to survive. So with having an interest in this area the author has conducted a survey in Sagar taluk, Shimoga district at Karnataka, to know about the empowerment of women through MFIs. This study also helped us to know about the socio economic condition of the rural empowered women after becoming the employee of this institution.

Keywords: Empowerment, MFIs, Gender inequality, Feminism, Socio Economic

INTRODUCTION

From many centuries women were not treated equal to men in many ways. They were not allowed to own their property, they did not have a share in the property of their parents, they have no voting rights, and they have no freedom to choose their work or job and so on. Now that we have come out of those dark days of oppression of women there is a need for strong movement to fight for the rights of women and to ensure that they get all right which men have or in other words a movement for the **“Empowerment of women”**.

Women empowerment is the ability of women to exercise full control over one's action. The origins of the concept of empowerment go back to the civil rights movement in the USA in the 1960. The status of women in India has been subject to many great changes over the past few millenniums. In early Vedic period women enjoyed equal status with men. Rigved and Upanishads mentioned several names of women sages and seers notably Gargi and Maitrey. However, later the status of women began to deteriorate approximately from 500 B.C., the situation worsened with invasion of Mughals and later on by European invaders.

In India, the empowerment process has already begun so many years ago. We are now witnessing a steady improvement in the enrollment of women in schools, colleges and even in profession institutes. Now, women are entering in all fields like job markets and showing their skills even in non-traditional sectors like police, defense, administration, media and research fields. In political fields, the reservation of women is a significant step towards their political empowerment. Women should remember that they are also rational, intelligent and thinking human beings. They should have political, legal, economical and health awareness.

In 21st century women in rural also has also become economically independent, able to take decisions, able to work in any fields etc, the main reasons for changes is empowerment of women especially in rural area. One of such empowerment means is Handloom industries. It's playing a vital role in economic development of the rural masses in India. As many small units in handloom sector have taken weaving at a commercial level, more women weavers are associating with weaving as a part time or full time profession. The activities that women performed for their domestic needs during their leisure time, how now been transformed into their professional work. So this contributes to the socio-economic development of the women as well as country also. It indicates the following words- **women as the motherhood of the nation should be strong, aware and alert.**

REVIEW OF THE LITERATURE

- According to Anupam hazra in their article 'The Need of Right-based Empowerment Approach for Women of Rural India' (July-Sept 2012). This states that the current framework of international development recognizes women empowerment as an immense effective stratagem for the all round development of

society. Despite numerous global commitment affirming women's rights, rural women are still much more likely than men to be poor, malnourished and illiterate. So naturally, the urgency of rural women's empowerment has got importance. Through this paper the author aims to critically assess the existing women empowerment policies in India and simultaneously makes an attempt to explore the emerging need to frame as well as to adopt right-based empowerment strategies to empower women in rural India.

- According to O.D.Heggade and Rashmi.H.N. in their article 'Empowering Rural Through Financial Inclusion' (April-June 2012). This states that the idea of financial inclusion is very powerful and socially important. The achievement of financial inclusion helps to promote personal/individual development/empowerment as well as social empowerment/development. The present paper intends to explain and analyze the problems financial exclusion with special reference to India and the need for and significance of financial inclusion to reduce poverty un/under employment and gender inequalities in a developing country like India.
- According to Dr.Shubhagi Rathi in their article 'Gandhi and Women Empowerment' (April-May 2010). This states that the status of women in India has been subject to many great changes over the past few millennia. From equal status with men in ancient time, through the low points of the medieval period, to the promotion of equal rights by many reforms. One of them is Mahatma Gandhi. An attempt is made in the present paper to understand Gandhi's views on women in the context of social, economic and political issues. In this paper the discuss on Gandhi's thought on women upliftment, against child marriage, social and religious barriers to widow remarriage, purdha system, dowry system, heavy expenditure in connection to marriage, etc. as well as discuss on Gandhi's view of women participation in politics. After Gandhi which position of women in India also focused.
- According to Nayak, Mahanta in their article 'Women Empowerment in India (17th Jan 2009).This states that stated that the present study is an attempt to analyze the status of women empowerment in India. The study reveals that women of India are relatively disempowered and they enjoy lower status than man in spite of many reforms undertaken by government. Gender gap exists regarding access to education and employment. A large gender gap exists in political participation too. The study concludes by an observation that access to education and employment are only the enabling factors to empowerment, achievement towards the goal, however, depends largely on the attitude of the people towards gender equality.
- According to M.Suguna in their article 'Education and Women Empowerment in India (December 2011).This stated that women education in India has also been a major preoccupation of both the government and civil society as educated women can play a very important role in development of the country. Education is milestone of women empowerment because it enables them to respond to the challenges, to confront their traditional role and change their life. Education of women is the most powerful tool of change of position in the society. Education also brings the reduction in inequalities and functions as a means of improving their status within the family.
- According to R.Emmanuel in their article 'A Profile of Handloom Industry in India' (July-2012).This stated that handloom are an important craft product and comprise the largest cottage industry of the country. Millions of looms across the country are engaged in wearing cotton, silk and other natural fibers. The last 100 years have seen the growth of mechanized textile production internationally. In part due to competition, handlooms have lost much of its market and it's almost not existence in most countries. Though it employs the highest number of people the handloom sector is considered as a sunset industry and there is an air of inevitability given the relentless march of mechanization, modernization and sophistication, still there are many advocates of handlooms for reasons including ideology, philosophy, sheer love for handloom products and economic arguments.

Statement of the problem

Empowerment of women has become the key solution to many socio-economic problems. Empowerment of women is nothing but a empowerment of family/household and in turn development of a nation. Empowerment of women leads to benefit not only to the individual women and to women groups, but also to the families, and community as a whole through collective action for development. This women empowerment also leads to the rural development, reducing poverty, health and productivity of families, sustainable development of human beings, equality in all areas, and also contributes for the improved prospects for the next generation. This shows that development of women is nothing but a overall development of the society. So this article made an attempt to know about the role of MFIs cooperative in empowerment of rural women.

Objectives of the study

1. To examine the role of 'MFIs' in the process of 'Rural Development'.
2. To understand the socio-economic condition of women after empowering through MFIs.
3. To examine the role of 'MFIs' in poverty eradication.
4. To identify motivational factors to women to become the employee of 'MFIs'.
5. To give some suggestions for the development of women empowerment in rural area.

Scope of the study

The present study tries to analyze and examine the role of MFIs in women empowerment. Geographical area for this study restricted to Sagar taluk of Shimoga District of Karnataka state. Besides, it also analyzes the role of MFIs in 'Poverty Eradication' and in 'Rural Development'.

METHODOLOGY

a. Primary Data:

The primary data collected by conducting a survey for women workers and members of the society through interview and questionnaire. Interview is conducted for the members of the society

b. Secondary Data:

The secondary data has been collected from office records of the society, books on women empowerment and handloom industries, from internet, from professional journals, from different magazines and also from earlier research work.

Sample Design/Size

This study is conducted for the 150 women weavers working in the society. The respondents have been selected by using simple random sampling technique.

Analysis and Interpretation

Table No.01: Classification of respondents on the basis of age

| Particulars | No. of Respondents | Percentage |
|----------------|--------------------|------------|
| 15-20 years | 0 | 0 |
| 21-30 years | 108 | 72 |
| 31-40 years | 27 | 18 |
| Above 40 years | 15 | 10 |
| Total | 150 | 100 |

(Source: Field Survey)

From the above table it is clear that, majority of the youths in the rural are working under this institutions and they belongs to the age group of 21 to 30 and rest of them belongs to the age group between 31 to 40.

Table No.02: Classification of respondents on the basis of educational qualification

| Particulars | No. of Respondents | Percentage |
|--------------|--------------------|------------|
| Uneducated | 84 | 56 |
| Schooling | 52 | 35 |
| College(PUC) | 10 | 7 |
| Graduation | 4 | 2 |
| Total | 150 | 100 |

(Source: Field Survey)

Above table shows that, majority of respondents i.e. 56% of respondents are uneducated, 35% of respondents did schooling. 7% of respondents did PUC and 2% of them did Graduation. This shows that, this institution is giving more opportunity towards the uneducated.

Table No.03: Classification of respondents on the basis of income

| Particulars | No. of Respondents | Percentage |
|--------------|--------------------|------------|
| 500 to 1000 | 0 | 0 |
| 1000 to 2000 | 0 | 0 |
| 2000 to 3000 | 63 | 42 |

| | | |
|--------------|------------|------------|
| 3001 to 5000 | 87 | 58 |
| Total | 150 | 100 |

(Source: Field Survey)

Above table shows that, majority of respondents i.e. 58% of respondents earning income from this society between Rs.3000 to 5000. 42% respondents earning income is in between Rs.2000 to 3001.

Table No.04: Classification of respondents on the basis of satisfaction about their Salary to lead their life

| Parameter | No. of Respondents | Percentage |
|--------------|--------------------|------------|
| Yes | 78 | 52 |
| No | 72 | 48 |
| TOTAL | 150 | 100 |

(Source: Field Survey)

We can easily understand from the above table that, 52% of respondents opined that the salary is enough to lead their life. But 48% respondents opined that the salary is not enough to lead their life.

Table No.05: Classification of respondents on the basis of work experience in MFIs society

| Particulars | No. of Respondents | Percentage |
|--------------------|--------------------|------------|
| Less than 2 year | 9 | 6 |
| 2 years to 4 years | 24 | 16 |
| 4 years to 6 years | 39 | 26 |
| Above 6 year | 78 | 52 |
| Total | 150 | 100 |

(Source: Field Survey)

From the above table it is clear that, majority of respondents are working in society from above 6 years, it works out to 52 respondents. 26 respondents are belonging to the group of 4 to 6 years' service. 16 respondents belong to the services group of 2 to 4 years and remaining 6 respondents belongs to the less than the 2 years.

Table No.06: Classification of respondents on the basis of rating the activities of Society towards Women Empowerment

| Parameter | No. of Respondents | Percentage |
|--------------|--------------------|------------|
| Best | 69 | 46 |
| Better | 81 | 54 |
| Good | - | 0 |
| Normal | - | 0 |
| Total | 150 | 100 |

(Source: Field Survey)

Above table shows that, out of 150 respondents 81 respondents given 'Better' for rating the activities of Co-operative society towards Women Empowerment and remaining 69 respondents given 'Best' for the same. This shows that this institution serving its basic objectives in a better way.

Table No.07: Classification of respondents on the basis of Chief Characteristic of the Society

| Particulars | No. of Respondents | Percentage |
|-----------------------------|--------------------|------------|
| Women empowerment | 114 | 76 |
| Economic freedom | 27 | 18 |
| Liberty in decision making | 9 | 6 |
| Identifiable working status | - | 0 |
| Total | 150 | 100 |

(Source: Field Survey)

We can easily understand that, 114 respondents think that women empowerment is the chief characteristic of MFIs. 27 respondent's thinks that economic freedom is the chief characteristic of MFIs and rest of the 9 respondents thinks that liberty in decision-making is Charka's chief character.

Table No.08: Classification of respondents on the basis of role of government in economic development

| Particulars | No. of Respondents | Percentage |
|----------------------------------|--------------------|------------|
| Education and awareness programs | 117 | 78 |
| Fairs, meals and events | 25 | 17 |
| Strengthening of support system | 3 | 2 |
| Social reorganization | 5 | 3 |
| Total | 150 | 100 |

(Source: Field Survey)

Above table clearly shows that, 117 respondents opined that education and awareness programs should be conducted by government for economic development. 25 respondents opined fairs, meals and events should be done by government and remaining respondent opined strengthening of support system and social recognition should be given by government for economic development.

Table No.09: Classification of Respondents on the Basis of Satisfaction with their Salary and other benefits

| Parameter | No. of Respondents | Percentage |
|--------------|--------------------|------------|
| Below 25% | - | 0 |
| 26% to 50% | 21 | 14 |
| 51% to 75% | 126 | 84 |
| Above 75% | 3 | 2 |
| Total | 150 | 100 |

(Source: Field Survey)

It is clear from the above table that, 126 respondents satisfied from 50% to 75% from their salary and other benefits. 21 respondents are satisfied from 26% to 50% and only 3 employee satisfied above 75% from their salary and other benefits.

Table No.10: Classification of respondents on the basis of change in the income of the Respondents after joining the MFIs

| Parameter | No. of Respondents | Percentage |
|--------------|--------------------|------------|
| Very high | 33 | 22 |
| High | 117 | 78 |
| Medium | - | 0 |
| Low | - | 0 |
| Total | 150 | 100 |

(Source: Field Survey)

From the above table it is clear that, 117 respondents feel high change in their income after joining the MFIs and rest of 33 respondents feel very high changes in their income after joining MFIs. This shows that, this institution is really helping towards the economic development of the women in rural area.

FINDINGS:

- Majority workers are women in MFIs Co-operative society.
- Majority of the youth workers are working under MFIs.
- Majority of the illiterate and less educated women's got an opportunity to empower them self economically.
- From this survey it is clear that, majority of the respondents belongs to the group of unmarried, its works out to 54%.
- It is clear from the survey analysis that, more number of respondents belongs to the occupation group of agriculture.

- The survey among the employees of society shown that majority of respondents are belongs to the monthly income group of Rs.3000 to 5000.
- It is found in this survey that, the society is getting better rating towards women empowerment.
- Majority respondents opined that women empowerment and economic freedom are the chief characteristics of society.
- It is found from the survey analysis that, the society is running without much support from government. They are expecting educational and awareness program and also fair, events to support the society.
- Majority of respondents joined this society because to support their family financially and also to become independent in the society.
- There is a high change in the income of the respondents after joining the MFIs women's multipurpose industrial co-operative society.
- From this survey analysis it can easily find out that every respondents has their savings, majority savings in bank's savings bank account and also some portion in post office and insurance.
- Women workers of the society will become directors and secretary in the society. They are encouraging the leadership quality in the women workers.
- The society is not fulfilling demand of the market. Because of lack of risk taking ability, lack support from government.
- Migration is very low after establishment of this society. Means for rural area people goes for urban for earning in earlier days but now they are earning in rural area itself because of this industry.

SUGGESTIONS:

- Developing good infrastructure will be more effective to give comfortable working conditions to the women employees.
- MFIs is suggested to adopt new technology to reduce stress and fatigue of employees.
- There is a need to provide monetary and non-monetary benefits to employees.
- They have to concentrate on women workers education and their personality development to raise their status in the society.
- This society need to start their branches in near rural places so that the women's who are coming from far places can go for near working place for work.
- MFIs should not only concentrate on the growth of the industry, but should also show active involvement on the social issues and other essential issues like health, sanitation etc. to develop the entire village along with women.
- There should be rotation of group leadership, so that all the members of the group get an opportunity to play managerial role.
- The NGOs and banks need to help women entrepreneurs to get various loans and advances.
- Government should create awareness to the rural people that these kinds of industries are main medium of rural employment generation.

CONCLUSION

The present research is an attempt to study the empowerment of women through MFIs in Heggodu. Several development programs have had their share in bringing about change and development in the lives of poor rural women. Further it shows that participation of women is a main ingredient for the successful empowerment. It is pity that weavers ever sincere and enterprising work goes unrewarded and unrecognized. MFIs is concerned with the development of women in all respect along with a sound knowledge about their rights and duties. To make the MFIs industry really meaningful and successful the government at different levels have to intervene in a large scale not as provider of finance or provider of other inputs, but as facilitator and promoter. It is further suggested that sustainable effort from government, NGOs, experts in the fields must help and encourage the women to take handloom as a profession. The government must play a leading role and ensure that the industry is given a new lease of life. It will also considerably solve the unemployment problem for the young women of

the state and be able to improve their family life style. It will also increases the standard of living of rural people along with their confidence level. But also there is a need to frame appropriate policies to implement.

The above measures, if implemented properly, will certainly benefit the industry. The MFIs Women Mutlipurpose Co-operative Industrial Society will have a great future if it gets better organized and adapts the changes.

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WILL CONSUMER PSYCHE MUTATE WITH PANDEMIC - CONSUMER INSIGHTS WITH ARTIFICIAL INTELLIGENCE

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ABSTRACT

Pandemic has influenced consumer behaviour, by ways that will spur Artificial Intelligence and its development and advancement. As consumer's psyche has changed and has compelled for purchasing progressively online to maintain a strategic distance from the new dangers of shopping in stores, they are giving dealers more information on inclinations and shopping propensities.

Artificial Intelligence is a wide-going tool that empowers individuals to re-evaluate how to coordinate data, examine information, and utilize the subsequent bits of knowledge to improve and it is changing all social statuses. The pandemic has brought life to a standstill. The adverse effect of this situation has a great amount of impact on the way consumers would now think, buy and behave through

their mutation in the Consumer behaviour. The purpose of this study is to understand the consumer insights through Artificial Intelligence. The objective is to understand if this consumer psyche mutation will continue in the same way. This will also mutate the Mall hopping behaviour which consumers had ever since the Organized Retailing emerged. The methodology that would be adopted for this study Comprised of Primary and Secondary data. The methodology adopted was content and literature on the topic along with a structured questionnaire to arrive at detailed analysis. EFA is carried out along with Principal Component analysis through the analysis.

Keywords - Pandemic, Online shopping, Mutation, Consumer psyche, Artificial Intelligence.

1. INTRODUCTION

AI innovations and devices play a key role in each part of the COVID-19 emergency reaction understanding the infection and quickening clinical exploration on medications and medicines distinguishing and diagnosing the infection, and foreseeing its development helping with forestalling or easing back the infection's spread through reconnaissance and contact following reacting to the wellbeing emergency through customized data and learning checking the recuperation and improving early admonition devices.

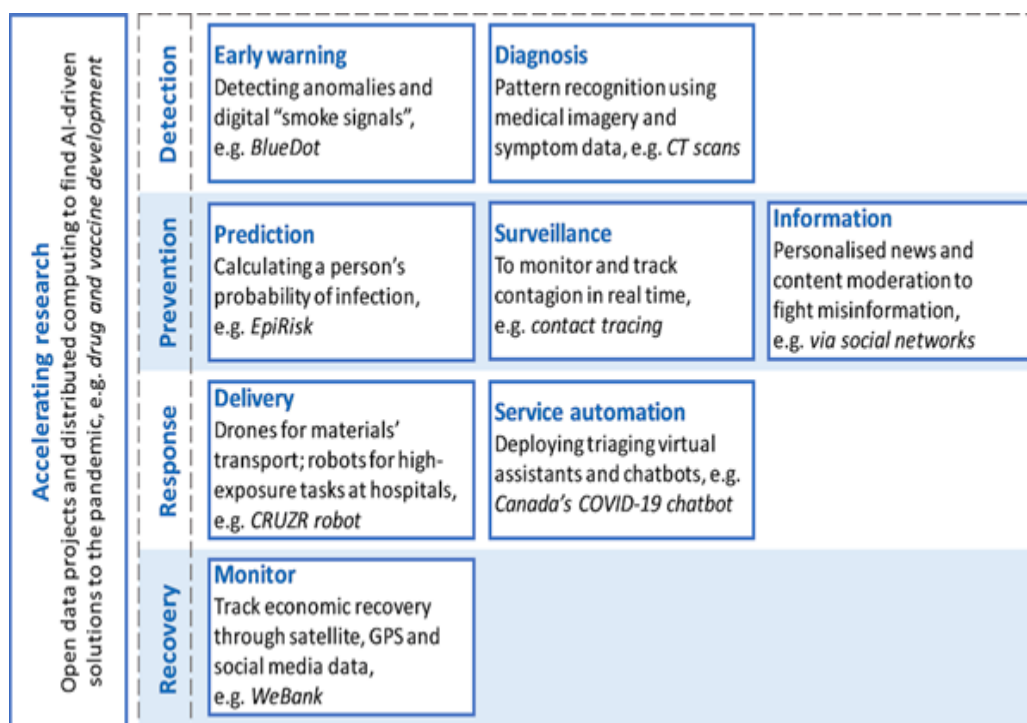
Man-made consciousness has demonstrated its value in this season of emergency. The innovation is probably the best officer the world would ever get in the battle against coronavirus. Computer based intelligence alongside its subsets is utilizing critical advancement over the social insurance segment and others too to win against the pandemic. The authorities and government specialists are identifying individuals who are not wearing a mask or protection gear which is very basic in the present time, Artificial Intelligence (AI), Natural Language Processing (NLP) powers talk projects to help distinguish the episode in the underlying stages. NLP, also, is driving checking endeavours so as to limit the infection spread.

To help encourage the utilization of AI all through the emergency, strategy producers ought to energize the sharing of clinical, sub-atomic, and logical datasets and models on communitarian stages to help AI specialists fabricate viable apparatuses for the clinical network, and ought to guarantee that scientists approach the fundamental processing limit.

II. ARTIFICIAL INTELLIGENCE TO ADDRESSING THE CHALLENGES OF THE CORONA VIRUS

To understand the full guarantee of AI to battle COVID-19, arrangement creators must guarantee that AI frameworks are reliable and lined up. They should regard human rights and protection; be straightforward, reasonable, powerful, secure and safe; and entertainers associated with their turn of events and utilize ought to stay responsible.

Figure 1. Examples of AI applications at different stages of the COVID-19 crisis



source: oced.org

Utilizing AI to help identify, analyse and forestall the spread of the coronavirus. Early Warning research utilizing AI to comprehend and treat COVID-19 Simulated intelligence apparatuses and methods can support policymakers and the clinical network comprehend the COVID-19 infection and quicken research on medicines by quickly examining enormous volumes of exploration information. Computer based intelligence text and information mining instruments can reveal the infection's history, transmission, and diagnostics, the board measures, and exercises from past pandemics.

Profound learning models can help foresee old and new medications or medicines that may treat COVID-19. A few establishments are utilizing AI to distinguish medicines and create model antibodies. DeepMind and a few different associations have utilized profound figuring out how to foresee the structure of proteins related with SARS-CoV-2, the infection that causes COVID-19. Devoted stages or fora permit the union and sharing of multidisciplinary ability on AI, including universally. The US government for instance has started an exchange with worldwide government science pioneers that incorporates utilizing AI to quicken examination of coronavirus writing made accessible.

Access to datasets in the study of disease transmission, bioinformatics and atomic demonstrating is being given, for example through the COVID-19 Open Research Dataset Challenge by the US government and accomplice associations that makes accessible more than 29 000 scholarly examination articles for coronavirus and COVID-19. Figuring power for AI is additionally being made accessible by innovation organizations, for example, IBM, Amazon, Google and Microsoft; people giving PC preparing power (for example Folding@home); and by open private endeavours like the COVID-19 High Performance Computing Consortium and AI for Health.

Inventive methodologies including prizes, open-source coordinated efforts, and hackathons, are quickening research on AI-driven answers for the pandemic. For instance, the United Kingdom's "CoronaHack – AI versus Covid-19" looks for thoughts from organizations, information researchers and biomedical specialists on utilizing AI to control and deal with the pandemic.

Significance of AI to help recognize, analyse and forestall the spread of the coronavirus

AI can likewise be utilized to help distinguish, analyse and forestall the spread of the infection. Calculations that distinguish examples and oddities are as of now attempting to recognize and foresee the spread of COVID-19, while picture acknowledgment frameworks are accelerating clinical determination. Computer based intelligence fuelled early admonition frameworks can help recognize epidemiological examples by mining standard news, online substance and other data diverts in various dialects to give early alerts, which can supplement syndromic observation and other human services systems and information streams (for example WHO Early Warning

System, Bluedot). Artificial intelligence devices can help recognize infection transmission chains and screen more extensive monetary effects. In a few cases, AI advancements have shown their capability to surmise epidemiological information more quickly than conventional revealing of wellbeing information. Foundations, for example, Johns Hopkins University and the OECD (oecd.ai) have likewise made accessible intelligent dashboards that track the infection's spread through live news and constant information on affirmed coronavirus cases, recuperations, and spread.

Fast conclusion is critical to constrain infection and comprehend the ailment spread. Applied to pictures and manifestation information, AI could help to quickly analyse COVID-19 cases. Consideration must be given to gathering information illustrative of the entire populace to guarantee versatility and exactness. Constraining infection is a need in all nations and AI applications are forestalling the infection's spread.

Various nations are utilizing populace observation to screen COVID-19 cases. For instance, in Korea calculations use geolocation information, reconnaissance camera film and Visa records to follow coronavirus patients. China appoints a hazard level by shading code - red, yellow or green to every individual showing disease chance utilizing mobile phone programming. While AI models use travel, instalment, and correspondences information to foresee the area of the following episode, and advise fringe checks, web search tools and web-based social networking are likewise assisting with following the infection progressively.

Numerous nations, including Austria, China, Israel, Poland, Singapore and Korea have set up contact following frameworks to recognize conceivable contamination courses. In Israel, for instance, geolocation information was utilized to distinguish individuals coming into close contact with known infection transporters, and send them instant messages guiding them to segregate themselves right away. Semi-self-sufficient robots and automatons are being sent to react to quick needs in emergency clinics, for example, conveying food and prescriptions, cleaning and cleansing, supporting specialists and medical caretakers, and performing conveyances of hardware.

III. OBJECTIVES

- Understand the change in Consumer buying patterns in Pandemic
- Assess role of Artificial Intelligence with relation to consumer insights

How AI can help the reaction to the emergency, and the recuperation to follow

Conversational and intelligent AI frameworks help react to the well-being emergency through customized data, exhortation and treatment, and learning. To battle deception – the COVID-19 "infodemic"- interpersonal organizations and web crawlers are utilizing customized AI data and instruments and depending on calculations to discover and expel risky material on their foundation. Remote helpers and chatbots have been sent to help medicinal services associations, for instance in Canada, France, Finland, Italy, the United States and by the American Red Cross. These apparatuses help to triage individuals relying upon the nearness of side effects. The United States' Center for Disease Control and Prevention and Microsoft have built up a coronavirus self-checker administration to help clients self-evaluate COVID-19 and recommend a game-plan.

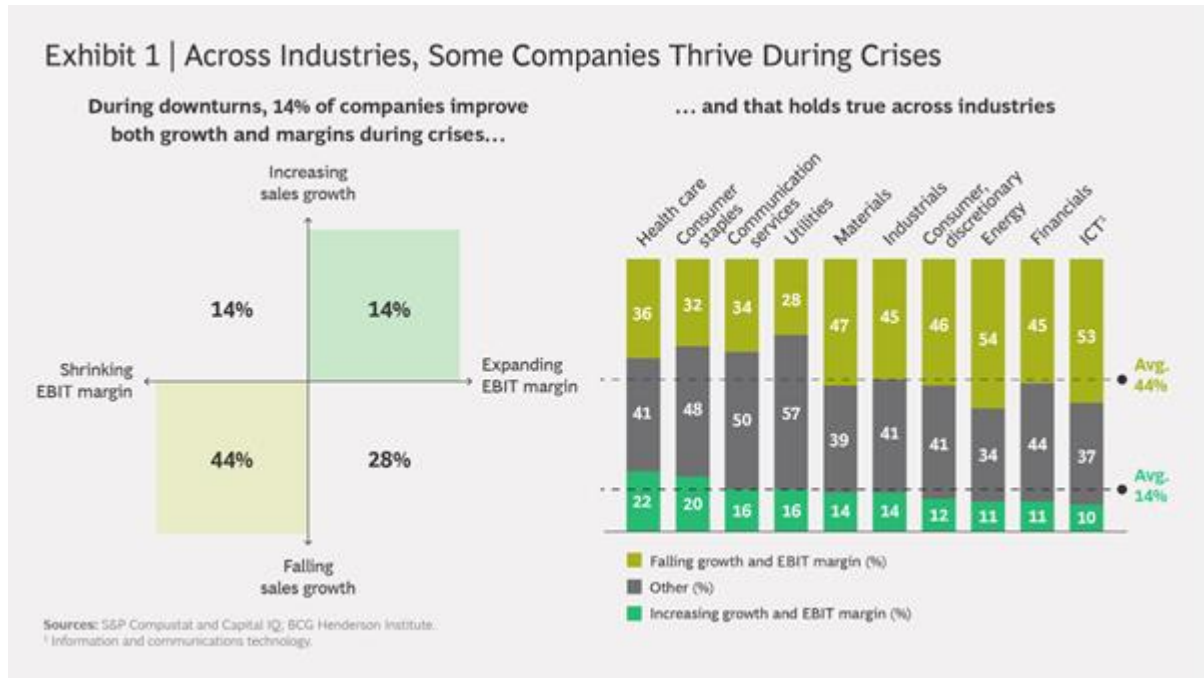
Recognizing, finding and reaching powerless, high-chance, people. Medical Home Network, a Chicago-based non-benefit, has actualized an AI stage to distinguish Medicaid patients most in danger from COVID-19 dependent on danger of respiratory intricacies and social detachment. Artificial intelligence may in the long run assume a job in quickening preparing and instruction of human services work force.

At last, AI instruments can help screen the monetary emergency and the recuperation- by means of satellite, long range interpersonal communication and other information. Google's Community Mobility Reports can gain from the emergency and construct early admonition for future episodes.

IV. THEORETICAL BACKGROUND AND UNDERSTANDING THE SIGNIFICANCE OF AI

The use of man-made consciousness will be monstrously important in helping organizations adjust to these patterns. Propelled robots that can perceive articles and handle undertakings that recently required people will advance the activity of industrial facilities and different offices all day, every day, in more areas and with little included expense. Artificial intelligence empowered stages will assist organizations with bettering reproduce live workplaces and make on-request work powers. Through AI and propelled information examination, AI will assist organizations with distinguishing new utilization designs and convey "hyperpersonalized" items to online clients. The best use cases will be those that consistently consolidate AI with human judgment and experience.

A few organizations that are on the cutting edge of these patterns and have just started the AI excursion will flourish in the post-COVID world. Once more, history gives a guide: during the four past worldwide monetary downturns, 14% of organizations were really ready to increment the two deals development and net revenues, as per Boston Consulting Group research. Most of organizations, in any case, are at the beginning phases of the excursion—or presently can't seem to start.



Source: BCG analysis

Achievement won't be simple. A few organizations have just propelled AI use cases that will be useful in the current emergency. The test will be proportional them up. Those that improve ready to explore dubious gracefully and request, acclimate to disturbances in tasks and flexibly chains, designate their workforces, and adjust to sharp changes in purchaser certainty and needs. Advanced locals

may have an underlying edge. Different organizations should act rapidly to obtain the abilities, capacities, and methods of working expected to start the AI venture. Yet, paying little mind to their beginning stage, organizations must look past the COVID-19 emergency and start concentrating on changes that put AI at their centre.

WHY AI WILL BE A MUST IN THE POST-COVID WORLD

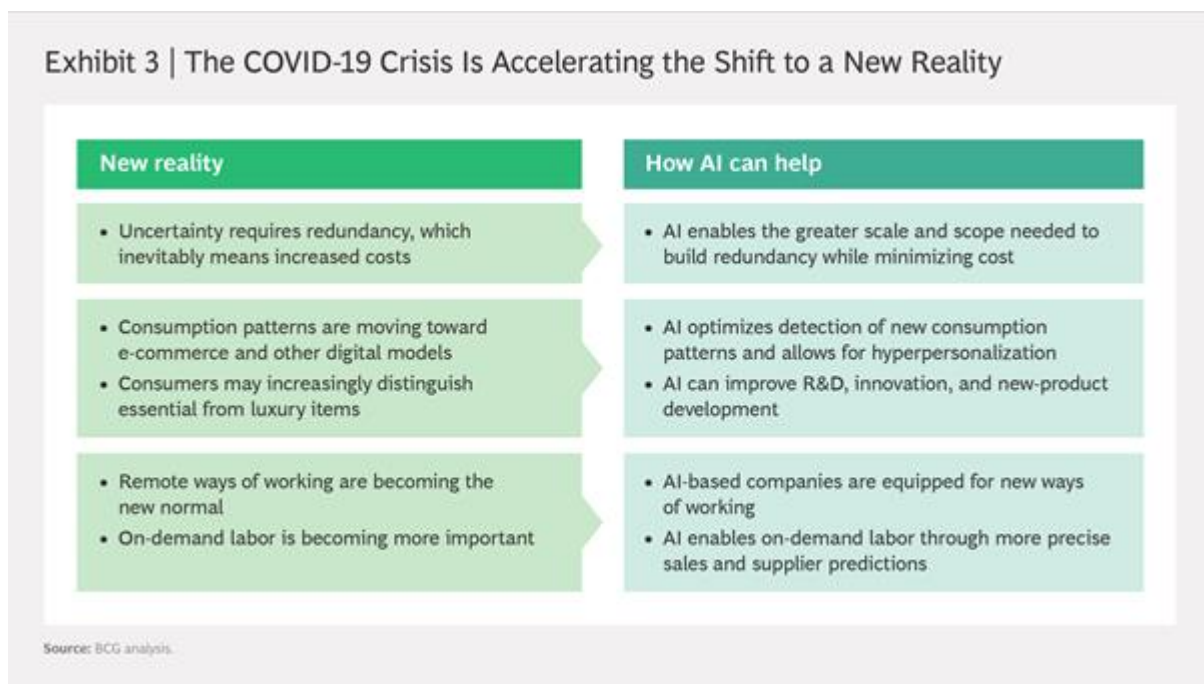
Most organizations as of now have broad involvement in advanced applications, for example, robotization and essential information examination. In any case, AI, which empowers machines to take care of issues and take activities that in the past must be finished by people, goes a long way past that. Man-made intelligence instruments examine gigantic volumes of information to pick up fundamental examples, empowering PC frameworks to settle on complex choices, anticipate human conduct, and perceive pictures and human discourse, among numerous different things. Computer based intelligence empowered frameworks additionally ceaselessly learn and adjust.

These abilities will be gigantically significant as organizations go up against and adjust to the new truth of the current emergency and its consequence.



Source: BCG analysis

This new reality will essentially affect organizations' costs, income, and working models. Beneath we survey how the worldwide business scene is changing along three measurements—esteem chain repetition, moving utilization examples, and far off methods of working—and the job that AI can play in empowering organizations to flourish and hold onto upper hand in this new condition.



Source: BCG analysis

A. Types of Artificial Intelligence

At an exceptionally significant level computerized reasoning can be part into two expansive sorts: limited AI and general AI. Thin AI is the thing that we see surrounding us in PCs today: clever frameworks that have been instructed or figured out how to complete explicit errands without being unequivocally modified how to do as such. This kind of machine knowledge is obvious in the discourse and language acknowledgment of the Siri menial helper on the Apple iPhone, in the vision-acknowledgment frameworks on self-driving vehicles, in the proposal motors that recommend items you may like dependent on what you purchased before. In contrast to

people, these frameworks can just learn or be instructed how to do explicit undertakings, which is the reason they are called restricted AI.

Defining Narrow AI

There are countless rising applications for restricted AI: deciphering video takes care of from drones doing visual investigations of framework, for example, oil pipelines, arranging individual and business schedules, reacting to straightforward client assistance inquiries, co-ordinating with other savvy frameworks to do errands like booking a lodging at an appropriate time and area, helping radiologists to spot expected tumours in X-beams, hailing improper substance web based, recognizing mileage in lifts from information assembled by IoT gadgets, the rundown continues forever.

Defining General AI

Counterfeit general knowledge is altogether different, and is the sort of versatile acumen found in people, an adaptable type of insight fit for figuring out how to do immeasurably various assignments, anything from haircutting to building spreadsheets, or to reason about a wide assortment of themes dependent on its amassed understanding. This is such an AI all the more usually found in motion pictures, any semblance of HAL in 2001 or Skynet in The Terminator, however which doesn't exist today and AI specialists are wildly separated over how soon it will end up being a reality.

Execution of AI

An overview directed among four gatherings of specialists in 2012/13 by AI analysts Vincent C Müller and rationalist Nick Bostrom revealed a 50 percent chance that Artificial General Intelligence (AGI) would be created somewhere in the range of 2040 and 2050, ascending to 90 percent by 2075. The gathering went considerably further, anticipating that alleged 'genius' - which Bostrom characterizes as "any astuteness that significantly surpasses the subjective exhibition of people in for all intents and purposes all areas of intrigue" - was normal somewhere in the range of 30 years after the accomplishment of AGI. All things considered, some AI specialists accept such projections are uncontrollably hopeful given our restricted comprehension of the human cerebrum, and accept that AGI is still hundreds of years away.

B. Ways to Combat Corona with AI

Man-made consciousness is having an influence in each phase of the COVID-19 pandemic, from anticipating the spread of the novel coronavirus to driving robots that can supplant people in clinic wards. That is as indicated by Oren Etzioni, CEO of Seattle's Allen Institute for Artificial Intelligence (AI2) and a University of Washington software engineering teacher. Etzioni and AI2 senior right hand Nicole DeCario have come down AI's job in the current emergency to three quick applications: Processing a lot of information to discover medicines, decreasing spread, and rewarding sick patients.

Artificial Intelligence is assuming various jobs, which are all significant dependent on where we are in the pandemic cycle," as per GeekWire in an email. "In any case, imagine a scenario where the infection could have been contained. Canadian wellbeing observation start-up BlueDot was among the first on the planet to precisely recognize the spread of COVID-19 and its hazard, as indicated by CNBC. In late December, the start-up's AI programming found a group of unordinary pneumonia cases in Wuhan, China, and anticipated where the infection may go straightaway.

"Envision the quantity of lives that would have been spared if the infection spread was moderated and the worldwide reaction was activated sooner," Etzioni and DeCario said.

C. Can AI carry analysts more like a fix?

The best thing computerized reasoning can do now is assist analysts with scouring through the information to discover possible medicines, the two included. The COVID-19 Open Research Dataset (CORD-19), an activity expanding on Seattle's Allen Institute for Artificial Intelligence (AI2) Semantic Scholar venture, utilizes regular language handling to break down countless logical exploration papers at an uncommon pace. "Semantic Scholar, the group behind the CORD-19 dataset at AI2, was made on the theory that remedies for some, ills live covered in logical writing," Oren and DeCario said. "Writing based revelation can possibly advise antibody and treatment advancement, which is a basic subsequent stage in the COVID-19 pandemic."

PC models outline tainted cells

Coronaviruses attack cells through "spike proteins," yet they take on various shapes in various coronaviruses. Understanding the state of the spike protein in SARS-Cov-2 that causes coronavirus is critical to making sense

of how to focus on the infection and create treatments. Many examination papers identified with spike proteins are in the CORON-19 Explorer to all the more likely assist individuals with understanding existing exploration endeavours.

It has been a couple of months since COVID-19 initially showed up in a fish and-live-creature showcase in Wuhan, China. Presently the infection has crossed fringes, tainting more than one million individuals around the world, and researchers are scrambling to discover an immunization. "This is one of those occasions where I wish I had a gem ball to see the future," Etzioni said of the probability of AI carrying specialists more like an antibody. "I envision the antibody engineers are utilizing all instruments accessible to move as fast as could reasonably be expected. This is, for sure, a race to spare lives." In excess of 40 associations are building up a COVID-19 immunization, including three that have made it to human testing.

Aside from immunizations, a few researchers and pharmaceutical organizations are cooperating to create treatments to battle the infection. A few medicines incorporate utilizing antiviral remdesivir, created by Gilead Sciences, and the counter jungle fever sedate hydroxychloroquine.

Man-made intelligence's mission to confine human communication

Constraining human cooperation pair with Washington Gov. Jay Inslee's compulsory stay-at-home request is one way AI can help battle the pandemic, as indicated by Etzioni and DeCario.

Individuals can arrange goods through Alexa without venturing foot inside a store. Robots are supplanting clinicians in emergency clinics, sterilizing rooms, give telehealth administrations, and process and examine COVID-19 test tests. An InTouch Vici telehealth machine like the one rewarding a patient in Everett, Wash. Specialists even utilized a robot to treat the principal individual determined to have COVID-19 in Everett, Wash., as indicated by the Guardian. Dr. George Diaz, the segment head of irresistible maladies at Providence Regional Medical Centre, told the Guardian he worked the robot while sitting outside the patient's room.

The robot was furnished with a stethoscope to take the patient's vitals and a camera for specialists to speak with the patient through an enormous video screen. Robots are one of numerous ways clinics around the globe keep on diminishing danger of the infection spreading. Simulated intelligence frameworks are helping specialists recognize COVID-19 cases through CT sweeps or x-beams at a fast rate with high exactness. Bright.md is one of numerous new businesses in the Pacific Northwest utilizing AI-fuelled virtual social insurance programming to assist doctors with rewarding patients all the more rapidly and proficiently without having them really step foot inside an office.

Two Seattle new companies, MDmetrix and TransformativeMed, are utilizing their advancements to help emergency clinics the country over, including University of Washington Medicine and Harborview Medical Centre in Seattle. The organizations' product assists clinicians with bettering see how patients ages 20 to 45 react to specific medicines versus more established grown-ups. It likewise checks the normal timespan between individual to-individual versus network spread of the illness. The Centres for Disease Control and Prevention utilizes Microsoft's HealthCare Bot Service as a self-screening apparatus for individuals pondering whether they need treatment for COVID-19.

V. REVIEW OF LITERATURE

According to Anyanwu (1993: 131), consumer behaviour is the problem solving activities undertaken by a consumer with a view to reducing purchase related risks while enhancing satisfaction by buying the right goods and services.

It could also be described as how people decide to spend their available resource that is their money, credit, time and effort. They spend these resources to accumulate experiences in the form of product, services and ideas with the hopes of satisfying their needs and possibly making themselves happier in the process.

The consumer tries to attain maximum satisfaction from every action of his income spent (Kalu: 1998, P. 207). The study of the consumer focuses on what products or services one purchase, why he purchase them, where he purchase them, how he uses them, how frequently he purchase them and who influences his purchase (Marcus et al: 1980., P. 39). Every effort is targeted to identifying the customer and his needs. But it takes a great deal of insight to know what they desire (The customer).

Gupta (2006, P. 176) defined consumer behaviour "as a study of a complex of those factors which resulted in particular buying decisions of consumers based on rationality, emotions or compulsion.

Further to this, consumer behaviour is likely to reveal whether target consumers of the enterprise emphasize more on the price of the product or its quality. On this basis, suitable pricing strategies and programmes aimed at upgrading the quality of organizations products to suit the needs, habits and behaviour of consumer will be put in place. Consumer decision making process varies from consumer to consumer and from product to product. It may vary in length of time required. According to Onah et al (2004, P. 80), consumer decision making is a problem solving process which presumes that the consumer goes through phases in undertaking a decision.

Man-made intelligence is universal today, used to suggest what you should purchase next on the web, to comprehend what you state to remote helpers, for example, Amazon's Alexa and Apple's Siri, to perceive who and what is in a photograph, to spot spam, or identify charge card misrepresentation.

On December 31, 2019, the China Health Authority alarmed the World Health Organization (WHO) to a few instances of pneumonia of obscure etiology in Wuhan City in Hubei Province in focal China. The cases had been accounted for since December 8, 2019, and numerous patients worked at or lived around the nearby Huanan Seafood Wholesale Market albeit other early cases had no presentation to this market. On January 7, a novel coronavirus, initially shortened as 2019-nCoV by WHO, was recognized from the throat swab test of a patient. This pathogen was later renamed as serious intense respiratory disorder coronavirus 2 (SARS-CoV-2) by the Coronavirus Study Group and the illness was named coronavirus ailment 2019 (COVID-19) by the WHO. As of January 30, 7736 affirmed and 12,167 speculated cases had been accounted for in China and 82 affirmed cases had been recognized in 18 different nations. Around the same time, WHO proclaimed the SARS-CoV-2 flare-up as a Public Health Emergency of International Concern (PHEIC).

Unpleasant life occasions bring about commencement, increase or changes in utilization propensities in an exertion to deal with the pressure (Mathur, Moschis, and Lee 2003). Hazard loath utilization conduct has been seen after enormous scope occasions, for example, fear based oppression (9/11) and its effect on the aircraft industry and the travel industry around the world; tidal waves in Thailand, Indonesia and all the more as of late in Japan; tremors in Haiti, Japan and New Zealand; significant floods and demolition in New Orleans also, Queensland; pandemics, for example, SARS, the H1N1 infection; fierce blazes in California and Victoria (Fortin and Uncles 2011).

Cataclysmic events, including those regular occasions we anticipate every year (e.g., typhoons, tornadoes, out of control fires, and floods), have come about a downturn in monetary action (Fortin and Uncles 2011) and changes in utilitarian and libertine shopping thought processes both during and after the occasion (Larson and Shin 2018). Utilitarian thought processes in buy incorporate restocking necessities, recharging things, supplanting things harmed by storms though decadent reasons incorporate the quest for opportunity, to challenge fatigue, celebrate the finish of the tempest and to revive with family what's more, companions (Larson and Shin 2018, 302–303). A three-section study directed post-Hurricane Katrina (United States 2005) recommends that shopper practices changed both during the quick progress after the tempest and years after the fact

(Kennett-Hensel, Sneath, and Lacey 2012). Discoveries propose that expanded securing and purchasing exhibited following the occasion was trailed by diminished utilization in the long haul; with certain respondents showing they were done willing to over-expend, less liable to overspend.

Regarding COVID-19, or the novel coronavirus-19, the general masses of every nation responded inside approximately fourteen days of staying alert of the infection's essence in their nation, to start a stock-up attitude. As this mind-set of readiness kicked in, the accompanying classifications turned into a need: clinical supplies, scouring liquor, antibacterial wipes, emergency treatment units, disinfectants, cold and influenza cures, and hack cures (Nielsen 2020). With numerous clients feeling "found napping", it could be viewed as a pre-cursor to things that will be kept in prepared flexibly by the populace later on. As the populace fulfilled crisis wellbeing supplies, the purchasing designs went to wash room stock-up. The accompanying classifications saw the best gains in deals: powdered milk, dried beans, canned meat, chick peas, rice, fish, dark beans, bread blend, water, and pasta (Ibid). As the populace filled storerooms with rack stable items that could be both named as filling and prepared when required (as restricted to new foods grown from the ground and new meats). In equal, these things are like the storeroom stacking things during war time. As nations have advanced into "another ordinary", numerous examples of conduct have changed, for example, utilizing online for food conveyances, increasingly close to home separation than already, and a move to less sharing of food, attire, and any things where an infection can be transmitted.

As observed from the war time age of both World War I and II, the accomplice living through that time commonly had a "stock up" mind-set that was viewed as "antiquated" by Millennials also, Centennials, who will in general have the thought

fundamental food supplies will consistently be promptly accessible. Work deficiencies, lockdown gridlock, shut ports, and accumulating made gracefully shortages not recently observed in created nations. In this sense, it is possible the COVID-19 accomplice will come back to the act of wash room stacking what's more, keeping up a stock of clinical supplies what's more, rack stable arrangements, having seen stock disturbances during the pandemic of 2020.

As indicated by Nielsen, the move to web based buying of food is one that will probably stay at a higher percent of the populace than before the pandemic (Nielsen 2020). It will be possible any items and administrations which included "high contact" or nearness to others will be forever affected by the pandemic.

Gaps identified through review of Literature:

Though there is much research done on the Pandemic and Consumer behaviour, not many papers discuss on the aspect of Consumer psyche per se and ways of combating it with use of technology, Artificial Intelligence. The current study has identified this gap and attempts are made to address this.

VI. METHODOLOGY

The methodology comprised of Primary data and Secondary data. Primary data was collected through a structured questionnaire to understand the psyche of consumers with the Pandemic. The role of AI in understanding these consumer insights has been highlighted.

To find out the perception of respondents towards Pandemic, Factor Analysis has been used. The correlations amongst variables factor analysis, has been carried out.

Sampling technique. Convenient sampling technique has been for a sample size of 250 customers. The areas covered include few districts of Maharashtra. These are Pune, Satara, Aurangabad, Nashik and Nagar. The respondents were Millennials.

Secondary data was collected through a review of literature and research articles.

Analysis

Frequency tables are administered and depicted, showing the percentages of employed respondents. Spearman Rank order correlation coefficient (Rho), non-parametric test has been used. This is used to measures the degree of relationship between two set of ranked observations. This clearly determines the

degree of effectiveness in predicting one ranked variable based on another ranked variable Rho assumes any value – 1 or + 1 indicating perfect relationship.

The rank correlation coefficient formula:

$$r_s = 1 - \frac{6 \sum d^2}{N(N-1)}$$

Where $\sum d^2$

= sum of the squared difference

in the ranking of the subject on the two variables

N = Number of subject being ranked a = 0.05

rs denotes the total summary measure and not the significance. The coefficient varies between – 1 and 1

and its value as a measure of the degree of association between dependent and independent variables. The consumer behaviour and AI are the variables here.

Table 1.1. Demographic Profiles

| Sex | Sub – total | % Rate |
|--------------|-------------|-------------|
| Male | 190 | 76% |
| Female | 60 | 24% |
| Total | 250 | 100% |

| Age Group | | |
|----------------------------------|------------|-------------|
| 18-25 | 50 | 20% |
| 26-29 | 61 | 24.4% |
| 30-35 | 80 | 32% |
| 36 and above | 59 | 23.6% |
| Total | 250 | 100% |
| Educational Qualification | | |
| graduates | 50 | 20% |
| Post Graduates | 130 | 52% |
| Employed | 70 | 28% |
| Total | 250 | 100% |

Factor analysis falls into a class of statistical techniques usually SPSS software has been used for testing the data. After the data was fed, the Bartlett's test of sphericity was run along with KMO.

Exploratory factor analysis is used to identify the underlying key constructs and investigate relationships amongst the key survey interval-scaled questions regarding perception towards consumer behaviour and consumer psyche. To test the suitability of data, reliability test has been conducted and value of Cronbach's alpha comes out to be 0.814 which is significant.

The following steps have been conducted to analyse the data.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy is computed which is found to be 0.728. It is indicated that the sample is good enough to proceed for factor analysis.

The overall significance of correlation matrices is tested with Bartlett Test of Sphericity (approx. chi square = 637.780 and significant at .000) provided as well as support for validity of the factor analysis of the data set.

Hence, all these three standards indicate that the data is suitable for factor analysis. Principal components analysis is employed for extracting factors.

| TABLE 1.2 : KMO & BARLETT'S TEST | | |
|--|------------|--------------|
| Kaiser Meyer Olkin Measure of Sample adequacy | | 0.728 |
| Barlett's Test of sphericity | chi Square | 637.780 |
| | Df | 253 |
| | Sig. | .000 |

Pivot Method:

Symmetrical pivot with Varimax was applied with the end goal of the current examination. Symmetrical revolution is favored when the analyst wishes to have factors or measurements which are not connected with one another. The dormant root standard is utilized for extraction of variables. According to the models, factors having dormant roots or

Eigen esteems more noteworthy than one are just viewed as critical. There are just seven components having Eigen esteems surpassing one in our investigation which are 5.166, 1.840, 1.738, 1.406, 1.288, 1.254 and 1.157 individually. The level of all out fluctuation is utilized as a file to decide how well the all-out factor arrangement represents. The present arrangement of record represents 60.219 % of the all-out variety of the information. It is truly acceptable figured which we got from the examination and we just lost 39 % of the data content in our investigation.

Table 1.3 Principal Component matrix

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|----|-------|-------------|-------------|-------|-------|-------------|-------|
| S1 | -.092 | .205 | .272 | .008 | -.045 | .637 | .143 |
| S2 | .384 | .500 | .073 | .228 | .224 | .067 | .176 |
| S3 | .174 | .750 | -.019 | -.144 | -.281 | .225 | .156 |
| S4 | .092 | .033 | .845 | -.066 | -.013 | .070 | -.003 |

| | | | | | | | |
|-----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| S5 | .781 | .299 | -.102 | .233 | .054 | .030 | .036 |
| S6 | .373 | -.102 | .447 | .244 | -.027 | .428 | -.095 |
| S7 | .012 | -.034 | -.096 | .011 | .002 | .667 | -.096 |
| S8 | .039 | -.024 | .007 | -.109 | .779 | .026 | -.164 |
| S9 | .641 | .047 | .420 | .061 | .032 | .120 | -.030 |
| S10 | .723 | .138 | .049 | .090 | -.143 | .069 | -.164 |
| S11 | .796 | -.058 | .089 | -.075 | .134 | -.043 | .051 |
| S12 | .671 | .322 | .180 | .303 | .200 | -.051 | .141 |
| S13 | .151 | .076 | -.036 | .141 | .484 | .488 | .216 |
| S14 | .224 | .077 | .229 | .344 | .256 | .308 | .000 |
| S15 | -.013 | -.017 | .276 | .296 | -.114 | -.376 | .510 |
| S16 | .031 | .103 | -.121 | -.052 | .072 | .061 | .645 |
| S17 | .039 | .060 | .191 | .790 | .052 | .114 | -.153 |
| S18 | .090 | -.013 | -.178 | .366 | .556 | -.038 | .221 |
| S19 | -.033 | .473 | .274 | -.051 | .469 | -.030 | .125 |
| S20 | .345 | .044 | -.243 | .623 | -.071 | -.045 | .120 |
| S21 | .268 | .251 | .543 | .247 | -.023 | -.204 | -.340 |
| S22 | .194 | .576 | .070 | .228 | .085 | -.029 | -.478 |
| S23 | .396 | .419 | -.024 | .261 | .208 | -.060 | -.188 |
| eigen Values | 5.166 | 1.840 | 1.738 | 1.406 | 1.288 | 1.254 | 1.157 |
| Cumulative percentage of variance | 14.917 | 23.210 | 31.379 | 39.512 | 47.021 | 54.236 | 60.219 |

TABLE 1.4

| Statement | Factor Loadings | Factor name & variances explained |
|--|-----------------|-----------------------------------|
| 1).Corona virus has created fear in me | 0.796 | |
| 2).Corona virus is Airborne | 0.781 | |
| 3). Corona originated from the Vet market | 0.723 | INITIATION |
| 4). Corona originated from Wuhan | 0.671 | |
| 5). Corona originated from China | 0.641 | |
| 6). Corona originated from New York | 0.750 | |
| 7). Corona is Air borne | 0.576 | |
| 8). Corona is Water borne | 0.500 | ORIGIN |
| 9).Corona is both air and water borne | 0.473 | |
| 10). Corona is a virus | 0.419 | |
| 11). Corona is a bacteria | 0.845 | |
| 12). Corona is a parasite | 0.543 | AWARENESS |
| 13). Corona is fatal | 0.447 | |
| 14). Corona can be is Cured | 0.790 | |
| 15). Corona is contagious | 0.623 | HEALTH |
| 16). The Lock down due to Corona has increased stress in my life | 0.344 | |
| 17). The Lock down due to Corona has impacted my work life balance My work life balance my work life balanceI do not like plastic bags | 0.779 | |
| 18). The Lock down due to Corona has not disturbed my life at all | 0.556 | LIFE CYCLE |
| 19). The shopping pattern has changed for all Purchases | 0.667 | |
| 20). The shopping frequency has multiplied | 0.637 | FREQUENCY |
| 21). The shopping options have multiplied Online | 0.488 | |
| 22) The products are overstocked wpurchaseOnline I want to buy product which are not tested | 0.645 | |

Table 1.4 Rotated component matrix

Several aspects relating to Initiation, Awareness, Origin, Health, Life cycle are relating to the Consumer behaviour and frequency are mapped for the purchase patterns to better understand the Consumer psyche.

How can AI help

Straightening the curve. Easing back the spread. I still can't seem to peruse - or hear - anybody state we are attempting to stop the coronavirus infection. To beat it. The nearest has been a news analyst saying that if everybody halted abruptly, six feet separated from every other person, the spread of the infection would end right away. Obviously, that won't occur. So we manage real factors. We attempt to foresee who will get the infection; cause analyse as fast as could be expected under the circumstances; to recognize who will react to treatment. Without an all-around demonstrated treatment, we need to realize who has the most obvious opportunity with regards to endurance and should, consequently, get a ventilator. These are not inquiries to be messed with. Incredibly, we don't have the appropriate responses. Any of them. It is a staggering representation of how little we think about the eventual fate of our species and the unsure occasions in which we live- lowering signs of a pandemic that fell on us abruptly.

A Flurry of AI Reports

Since the episode started, there has been a whirlwind of reports distributed about how AI may help. A great part of the exploration on which these reports are based could in the long run be imprinted in peer-inspected diaries. One, apparently in press at Radiology and online since March 19, 2020, depicts how AI may help in the brisk and exact conclusion of this infection.

The creators of this paper depict how a profound learning calculation can identify in chest CT pictures indications of the respiratory illness brought about by the coronavirus and how this calculation can recognize it from other lung ailments, including customary pneumonia.

As of now in late December 2019, CT checks indicated injuries in the lungs of Chinese patients particular from those related with different types of viral pneumonia. The March 27 ITN article noticed that "computer based intelligence may help with both the test procedure and perusing of the pictures taken." Days after the fact, the online rendition of IEEE SPECTRUM revealed that few U.S. emergency clinics had started conveying AI apparatuses to distinguish COVID-19 in CT and X-beam chest checks and to screen ailment movement. As indicated by the article, AI examination was being utilized on account of its "capability to ease the developing weight on radiologists." later on, the innovation "may help foresee which patients are well on the way to require a ventilator or drug," the article expressed. On March 30, New York University reported an exploratory AI device that predicts which patients with the infection will create "genuine" respiratory illness. Around that equivalent time analysts announced the improvement of an AI "structure" for foreseeing clinical seriousness from the coronavirus. The scientists composed that "given the expanding caseload, there is a pressing need to increase clinical abilities so as to distinguish from among the numerous gentle cases the not many that will advance to basic ailment."

In a world inundated with "most exceedingly awful" and "best" case situations (with a qualification between the two difficult to recognize), when the President of the United States forces a war-time protection creation request to drive makers like General Motors to make ventilators; when the Governor of New York says his state will require up to 40,000 of such gadget - endeavours to distinguish patients who need them takes on extraordinary significance.

Chest AI

Radiology sellers have for some time been creating AI bundles for lung illnesses. Computer based intelligence controlled calculations have been coordinated into clinical choice help bundles for the location and division of lung sores, just as the estimation of their volumes and distances across. The target has been to decrease the weight on radiologists - to recoil the time required for these doctors to do what they should do. In any case, the need has never been so tangible as with the coronavirus episode. If at any point there was a period for huge information to be procured, this is it. Picture, maybe, calculations plunging over and over into test information excessively voluminous for individuals to successfully examine. In any case, such profound jumps are non-existent. The explanation? Since the large information for them doesn't exist. The testing units expected to give it are not accessible. Indeed, countless coronavirus test packs are being delivered every day. However, these are negligible details contrasted with the 330 million individuals living in the United States.

The packs can scarcely fulfil - on the off chance that they even do - the quantity of patients announcing indications and the human services labourers who are attempting to think about them, labourers who need fundamental individual defensive gear veils and facial sprinkle monitors.

Worldwide Testing

South Korea has endured the flare-up moderately well. The administration there tried a large number of those in the politically separated nation, confining individuals who tried positive close by those with whom they related. Be that as it may, the U.S. has not had the option to do this at any rate not yet.

As per National Institute of Allergy and Infectious Diseases, it was noted on March 27 on National Public Radio that testing got looking moderate so far. In any case, presently we're seeing a considerably more improved framework with respect to its accessibility and usage. What's more, trying should enlarge generously. Consistently we catch wind of flattening the bend" and "easing back the spread." Is braving this emergency all we need to anticipate? Am I among the individuals who will bounce back from contamination or the individuals who will bite the dust from it.

How would this come to an End?

There are a couple of ways this episode could end, as per Vox's Brian Resnick clarified. Maybe general wellbeing measures distinguishing cases quick, placing contaminated individuals in seclusion will slow the spread of this coronavirus. That is the thing that halted the spread of SARS in 2003. "In the event that we moderate it with the goal that contaminations occur more than 10 or a year rather than more than one month, that is going to have a major effect the extent that what number of individuals genuinely tainted, what number of individuals may wind up hospitalized, and what number of they wind up kicking the bucket," said Tara Smith, a Kent State University disease transmission specialist. "We talk about it as 'straightening the plague bend'- so it is anything but a major, unexpected top in cases, however it's a progressively moderate level after some time." Since this is a zoonotic ailment, which means it originated from a creature, finding and taking out that source would likewise help.

Or on the other hand perhaps an immunization or antiviral will be imagined rapidly to control a more extensive pestilence however an antibody is relied upon to take in any event a year.

**We have to begin getting ready
for the following enormous,
fatal flare-up now**

The race to build up a treatment and antibody for the novel coronavirus outlines exactly how much science expands on past endeavours, similar to the reactions to MERS, SARS, and the Ebola infection. Be that as it may, it additionally shows that persevering exploration consideration matters much after a flare-up disseminates. An illness that spreads to a huge number of individuals in days can do a ton of harm in the months or years it takes to make a treatment or antibody, so a current group of examination can spare lives.

What should be accomplished for the infections that we don't comprehend too that despite everything has pandemic potential is simply fill in the database, to examine those infections, comprehend the structure of their proteins, comprehend the manner in which antibodies neutralize them," (NIAID's Graham). In any event, analysts and medication organizations should "create one model [vaccine] inside each [viral] bunch right through a clinical preliminary. And afterward possibly it goes on the rack or it's recorded in the writing, with the goal that you have that data accessible when things like this occur."

The Road ahead

Coronavirus has made room for robots and automatons. Coronavirus is infectious and difficult to contain, which implies that it's more secure for some human-to-human cooperation to be done remotely. Both in medical clinics and out in the open, remote correspondence implies that patients abstain from transmitting the malady and wellbeing labourers spare time on straightforward assignments. This has freed the route for robots and parts from other computerized advancements to assist. Presently, robots are being utilized to purify rooms, speak with confined individuals, take fundamental data, and convey prescriptions.

Close to Seattle, a robot helped specialists treat an American man determined to have the novel coronavirus. The robot, which conveyed a stethoscope, helped the patient speak with clinical staff while constraining their own introduction to the ailment. In the interim, Chinese clinics are presently transportation in robots from the Danish organization UVD Robots that can sterilize tolerant rooms, as indicated by an announcement. UVD Robots says that its wandering mechanical units work by radiating bright light all through a region, executing infections and microscopic organisms, including the coronavirus. Self-driving vehicles are in any event, conveying supplies to clinical labourers in Wuhan.

Flying robots, otherwise called drones, are additionally in the blend. Shenzhen MicroMultiCopter said in an announcement not long ago that it is conveying automatons to watch open spots, shower disinfectant, and lead

warm imaging. Chinese authorities have utilized automatons to follow whether individuals are going outside without wearing face veils or abusing other isolate rules. More on this reconnaissance pattern in a second.

General wellbeing information observation organizations Metabiota and BlueDot were both used to follow the underlying flare-up of the novel coronavirus. BlueDot really advised its customers of the coronavirus danger a few days before both the World Health Organization and the Centres for Disease Control and Prevention (CDC) gave their open alerts. Presently, a similar sort of innovation keeps on observing internet based life posts and other openly accessible substance to search for indications of the ailment's spread, as Wired has revealed.

Artificial intelligence is likewise helping out in diagnosing the disease. A few clinics in China are utilizing AI-based programming from the organization Infervision to look over CT pictures of patients' lungs to search for indications of Covid-19, the contamination brought about by the novel coronavirus. Simultaneously, the coronavirus pandemic has likewise enlivened a few medication organizations to utilize man-made reasoning controlled medication disclosure stages to scan for potential medicines. That procedure can include utilizing AI to discover altogether new atoms that may be equipped for rewarding the pneumonia-like sickness, or mining through databases of effectively endorsed drugs (for different ailments) that may likewise neutralize Covid-19.

Critically, while AI medicate disclosure may accelerate the way toward discovering contender for new medications and medicines, there's no assurance that the innovation will concoct anything better than what human researchers could discover all alone. Coronavirus has catalysed rivalry for all the more impressive facial acknowledgment. As Covid-19 has put quite a bit of this innovation in plain view, it's additionally introduced another defence for observation innovation: the danger of a pandemic. This thought isn't what you regularly get notification from either defenders or pundits of this conceivably obtrusive tech.

Keep in mind, simply a year ago the Hong Kong government attempted to boycott wearing face veils in open congregations so as to smother star vote based system dissidents. Presently, the Chinese government is encouraging makers to support creation of covers, wanting to slow the coronavirus spread in China, where the ailment has hit the hardest. So while distinguishing individuals not wearing covers could ensure general wellbeing, that ability likewise raises worries about the further advancement of facial acknowledgment that works whether individuals are wearing veils or not. This stands to make the innovation's danger to common freedoms far more atrocious. The coronavirus pandemic has additionally motivated facial acknowledgment organizations to coordinate their tech with warm imaging. This kind of checking is being utilized to detect whether individuals may have raised temperatures, which may demonstrate whether they've been tainted with the coronavirus and help confirm their character. SenseTime is selling warm imaging-empowered facial acknowledgment, as is Sunell, another China-based video observation organization, as per an official statement.

In the meantime, in Thailand, a biometric fringe screening framework is presently utilizing fever-identifying cameras, as indicated by the organization giving that innovation, Germany-based Dermalog.

Furthermore, facial acknowledgment venders are additionally utilizing coronavirus to push the possibility that sans touch biometric frameworks are more secure than, state, utilizing a key or a unique mark to enter a structure. This idea isn't really off base, as the CDC says it might be conceivable that the coronavirus could be spread by contact with contaminated surfaces, similar to a unique mark scanner. Thusly, Remark Holdings discharged an announcement asserting that facial acknowledgment is more secure than different types of biometric verification, such as fingerprinting, since it "expels the odds of sickness being spread through human-to-surface contact."

From numerous points of view, these more up to date, further developed innovations remain to help battle the coronavirus episode. But on the other hand there's something tragic about a flare-up being utilized as support for more reconnaissance. Defenders of observation tech centre around dangers to people groups' wellbeing and property, highlighting "hazardous" individuals like psychological militants and sex guilty parties. Less regularly, in any case, do defenders of this innovation point to the dangers related with an expected pandemic. In any case, presently pundits of observation tech who have commonly contended that the innovation compromises our common freedoms and here and there doesn't work will probably need to push against an alternate contention: serious dangers to general wellbeing. It's eventually hazy how the open will respond to the moving job of observation.

So the robots and the AI won't really spare us, however they may help. In the interim, the good old ways to deal with remaining solid assistance, as well. Try to adhere to the CDC's guidelines for keeping yourself and your relatives solid, for example, washing your hands and avoiding wiped out individuals which isn't especially cutting edge.

VII. KEY SUGGESTIONS AND DISCUSSION

Governments and different partners are urged to:

Energize multi-disciplinary and multi-partner co-activity and information trade both broadly and globally by the AI people group, clinical network, engineers and strategy creators to plan the issue, distinguish pertinent information and open datasets, share apparatuses and train models.

Perceive that AI is anything but a silver slug. Computer based intelligence frameworks dependent on AI work by distinguishing designs in information, and require a lot of information to discover these examples. The yields are just comparable to the preparation information, and now and again, analytic cases have been raised doubt about and some chatbots have given various reactions to inquiries on side effects. Guarantee that AI frameworks are conveyed capably and regard the OECD AI Principles. This is especially valid for transitory proportions of populace control and checking, as some AI frameworks raise worries about reason particular and the threat that individual information could be re-utilized in manners that encroach protection and different rights. Create and expand upon AI-fuelled observing instruments that empower research without yielding security.

Gain from this influx of the pandemic to plan for its possible reappearance. One measure is to resolve to investigate on AI innovations that can gain from restricted information, for example, from patients with peculiar conditions.

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ETHANOL PRODUCTION IMPACT ON THE PERFORMANCE OF SUGAR INDUSTRY

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ABSTRACT

Ethanol has turned very imperative aspect as it is turning as a substitute for crude oil. As per Niti Aayog's report of 2021 the benefits of ethanol blending would save India Rs 30000 crore of foreign exchange. This shift has encouraged sugar industries to focus on the ethanol production. Thus, the aim of this research study is to analyze the performance of selected BSE listed sugar sector companies in India for the period from FY2016-2017 to FY2020-2021. The financial performance parameters considered for the study are operating profit margin, net profit margin, current ratio, return on equity (ROE) and asset turnover ratio based on the in-depth review of literature for the said topic. The study is based on secondary data, which was collected from annual reports of the selected companies. Descriptive statistics and one-way Anova tests have been used to find out the significant relationship between the performance of the sugar mills with the net sales of ethanol segment of the selected companies. The research result was that there is a positive relationship between the performance ratios of the Avadh Sugar & Energy Ltd., Balrampur Chinni Mills Ltd., Dwarikesh sugar industries and Dalmia Bharat Sugar with respective revenue generated from the distillery during the study period. The study concludes that sugar mills need to improve the total assets utilization to generate more profit margin contribution from ethanol segment.

Keywords: Sugar Industry, Ethanol, Operating Profit, Return on Equity, Asset Turnover. **JEL Codes:** R0, H0, H7, R5

INTRODUCTION:

In India, the sugarcane sector is rapidly shifting towards the groundwork for a sustainable and efficient bio refinery industry. **NITI Aayog** report described the importance of the sugar industry in agriculture sector is that supports the livelihood of approximately 50 million sugarcane producers and approximately 5 lakh sugar mill workers. **Department of Food and Public Distribution** stated that in present time of the global scenario, about 115 countries produce sugar from various plants either sugar cane or sugar beet, and eight countries produce sugar from both sugar cane and sugar beet. After Brazil, India is the world's second largest producer and first rank in consumer of sugar.

According to **Singh S & Dewan J (2020)** despite several hurdles, the Indian sugar sector has made its way up the ladder of the world sugar market and future trends indicate that growth will continue. India's ethanol output has also increased. Production of ethanol for blending with crude oil will have an inverse effect on the production of sugarcane.

The Indian Government also took some initiatives and provided various affiliates to empower the sugar factories to enhance the capabilities of by-product of sugar with a standard quantity of 20% ethanol blending under the roadmap for ethanol blending Programme 2020-2025 as per **Solomon S (2014)**. According to **NITI Aayog** report sugarcane accounts 70 lakh tonnes of surplus sugar with large scope to diversify ethanol production without disturbing sugar supply needed to meet domestic demand and ethanol production capacity of 684 crore litres in the year 2020-21.

Considering the growing importance of the sugarcane industry and the production of ethanol, the researcher studied financial performance of the industry with variables like operating profit margin, net profit margin, current ratio, return on equity (ROE) and asset turnover ratio. The study focuses on the revenue segments of the ethanol which will impact on the enhancement the performance of the sugar companies. The scope of the study is limited to only four sugar mills named as Avadh Sugar & Energy Ltd., Balrampur Chinni Mills Ltd., Dwarikesh sugar industries and Dalmia Bharat Sugar which based on secondary data.

LITERATURE REVIEW:

Solomon, S. (2014) stated in their research that India is one of the leading producer and consumer of the sugar. The industry is fully encompassing 597 operating sugar mills, 213 cogeneration power plant, 309 distilleries, and numerous chemical making units is supported by 22 state sugarcane research stations and provided sugar machinery manufacturers, suppliers and technical experts in world. Various studies have been conducted to find out relationship of ethanol with profitability ratios. **NITI Aayog** in task force report of 2019-20 reported that the issues faced by the sugar cane producers with profitability and liquidity, only ₹2 hike of sugar prices were

done which not covered the cost of manufactures. Also, according to the Indian Sugar Mills Association (ISMA) in the research of **Solomon, S., Rao, G. P., & Swapna,**

M. (2020) expressed Sugar mills are struggling hard as sales of nearly INR 70,000 crore which have been declined to 50% to pay and the cane debt amounted of INR 16,000 crore, and global prices have drastically fallen down. Still, the very quickly sugar companies launched the new segment of production of hand sanitizers with total capacity 100,000 LPD successfully.

KPMG published in the roadmap of 2017 stated that the currently emerging technologies in the sweet sorghum and cellulosic ethanol will impact as future growth in energy as well as sugar markets. Also, currently due to high crude oil prices, **Ray, S., Goldar, A., & Miglani, S. (2012)** describes EBP (Ethanol Blending Programme) implementation to encourage domestic production of ethanol in the country. The ethanol prices would be greater profitability in replacement of the petrol as given to OMCs, consumers and through higher MSP to sugar cane farmers. Similarly, the government took initiative for setting up expansion of grain based distilleries to increase production of ethanol. Schemes for extending financial assistance to sugar mills & molasses based standalone set up distilleries for enhancement and increase of 1st Generation (1G) ethanol production capacity. This scheme for sugar mill to setting up The benefits of scheme are the lowest number of interest subvention @ 6% per annum or 50% of rate of interest charged by banks/NBFCs/NCDC/IREDA/any other financial institutions which are eligible for re-funded from NABARD. The benefits of interest subsidiary are to be extended to only those distilleries which will be using dry milling technique to produce Dry Distillers Grain Soluble (DDGS) and zero liquid discharge (ZLD) application to produce ethanol.

Murniati, S. (2016) evidence of this research paper shown that association of capital proxy with different profitability ratios using multiple regression analysis of the listed Food and Beverage companies in Indonesia Stock Exchange for study period of 2011 to 2014. The results of study were shown Current ratio, firm sizes, return on Equity (ROE) and return on assets (ROA) positive effect growths on stock prices. While net profit margin (NPM) increases as the total sales rise which shown significantly no effect on stock prices. The research article of **ICICI direct** published describe Sugarcane is becoming as prominent energy crop (2021) shown the sugar segment levels are coming depressed from the peak of 1.45 Crores tonnes in September 2019 to ~0.8 crores tonnes in September 2021. Additionally, in the current sugar season, the industry would be sacrificing 2 MT of sugar for ethanol production. Further, to achieve 20% ethanol blending programme 2025, ~300-400 crore liters of ethanol is required to be produced through grain based distilleries. Thus, the domestic sugar prices and improvement in the distillery segment production as the profitability of sugar mills, going forward.

RESEARCH METHODOLOGY:

The study is conducted with keeping in mind two objectives i.e. to study the segment-wise performance of selected companies and to find the relationship between the segment revenue from ethanol and its impact on the performance. The study is built on the secondary data; audited financial statements of the companies i.e. Annual Report of the selected companies. This study is based on analytical nature and covers period of four years from FY2016-2017 to FY2020-2021. The different tools used bar diagram, tabular presentation and one way Anova test for clear picture for the financial performance of the companies.

Out of 732 installed sugar factories in the country, the total 26 companies listed in National stock Exchange (NSE) and 33 companies listed in Bombay stock Exchange (BSE) which has two main national exchange in India. The sugarcane companies which satisfied the following criteria have been selected, the criteria are:

- Sugar companies must be listed in security market.
- The companies accounting year must be from April to March.
- The annual report shared the details of the revenue distribution in different segments.
- Availability of data for a period of five years.

Thus, the sugar mills that satisfy the above conditions and selected with respect to their market capitalization, sales, revenues and performance basis for further studies are:

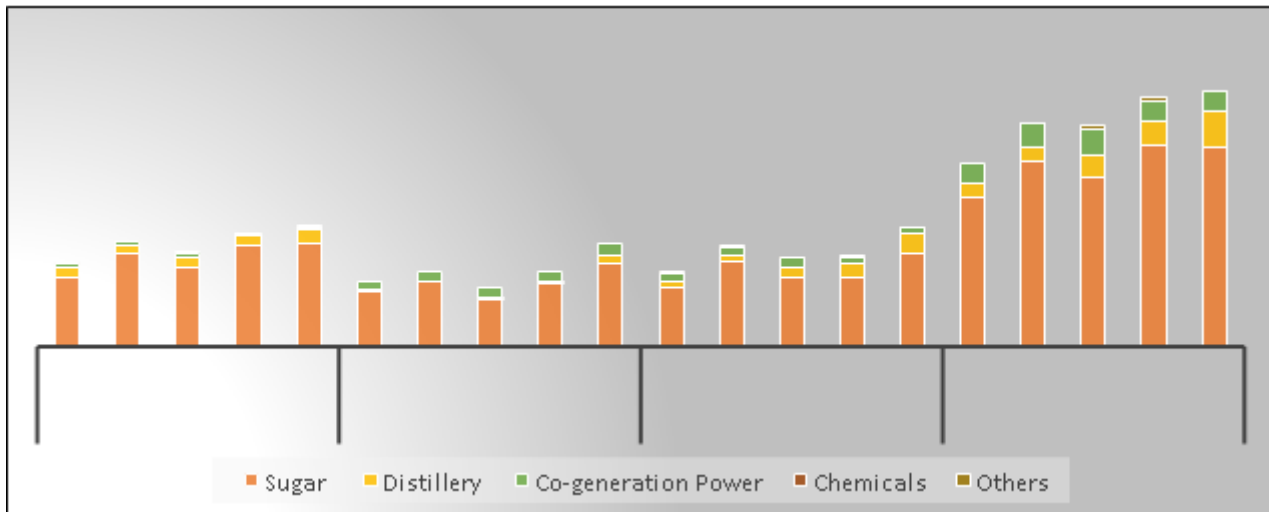
- Dwarikesh sugar industries
- Balrampur Chinni Mills Limited
- Dalmia Bharat Sugar

- Avadh sugar & energy limited

EMPIRICAL ANALYSIS

The sugar industry is a fast-growing industry with diversified segments such as sugar manufacturing, ethanol/distillery production, chemicals and cogeneration power. As discussed in the review of literature, the government EBP (Ethanol Blending Programme) concerned efforts of the sugar mills to enhance distillation capacity for the target of 20% fuel grade ethanol blending in the country by 2025. To understand the ethanol production capacity of the sugarcane factories, the author looked through the financial statement footnotes of revenue from operations generated from different segments of the companies. The figure (1) helps to know the segment wise revenue distribution to understand the performance of the sugar companies.

Figure (1): Segment wise - Revenue Distribution for the period of FY2017-2021



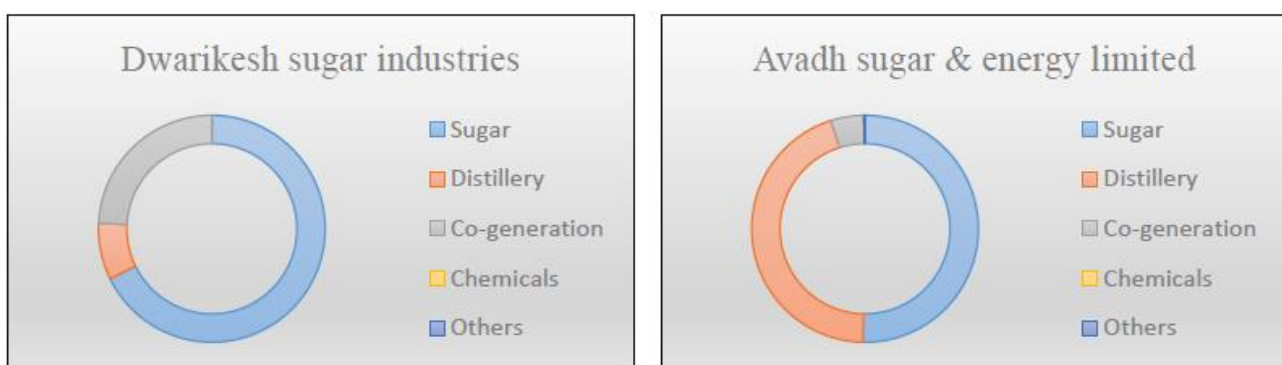
Source: Annual Report

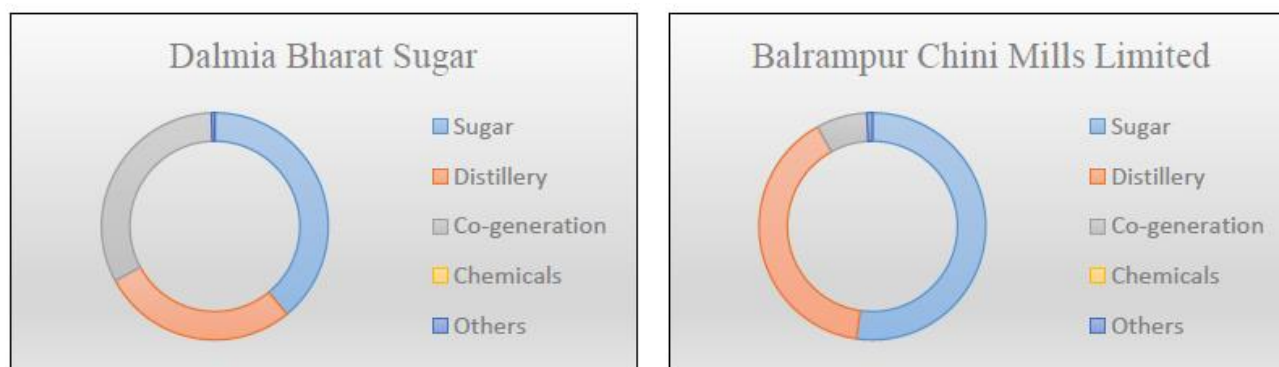
The figure (1) shown that the Balrampur Chini Mills Limited is one of India's largest integrated sugar manufacturing companies with highest revenue generated from sugar segment sales of

₹5729.13 Crores in FY2021. The higher and lower revenue generated from distillery capacity rank as Balrampur Chini Mills Limited and Dwarikesh sugar industries respectively. As the Dwarikesh sugar industries not only focused cogeneration power segment but also enhanced ethanol production with compound annual growth rate (CAGR) by 35.15% as capacity of 130 kilo litres per day in FY2021. The performance of Avadh sugar & energy limited inclined not much contribution of net sales of distillery capacity from 22.69% in FY2016-17 to 22.78% in FY2020-21 from total revenue of the operations in sugar mills.

Earnings Before Interest & Tax (EBIT) measures profitability of sugar factories with ability to earn from each segment operations. The price of ethanol extracted from C-Heavy molasses was fixed at ₹45.69 per litre; the price of ethanol extracted from B-Heavy molasses was at ₹57.61 per litre; The price of ethanol from sugarcane syrup price was fixed at ₹62.65 per litre in FY2021. Whereas the revenue earned from the sugar segment cost of ₹33 per kg during FY2021. The figure (2) expressed about segment wise generation of EBIT in sugarcane industry during FY2020-21.

Figure (2): Segment wise – Generation of EBIT for the period of FY2020-21





Source: Annual Report

The figure (2) depicts the highest manufacturing capacity of Balrampur Chini Mills Limited shown more EBIT sources amounted to distillery and sugar as ₹341.05 Crores and ₹277.84 Crores respectively. Dwarkesh sugar industries reported high earnings of cogeneration power as ₹88.47 Crores and followed by Distillery as ₹52.86 Crores. The Avadh sugar & energy limited has EBIT from ethanol segment more than 50% i.e. 54.79% in FY2021. The low EBIT generated in Dalmia Bharat Sugar of ₹103.29 Crores which only 24.06% of the total earnings from the core operations.

The comparative studies of figures (1) and (2) show that net profit margin of sugar segment is high as compared with by-products of Sugar Ethanol Biofuel, cogeneration, chemicals and many other sources. The contribution net profit of Ethanol is highest with less quantity of net sales of the Ethanol.

Hypothesis Testing

H0- There is no significant relationship between the ethanol production and its impact on the financial performance of the company.

H1- There is significant relationship between the ethanol production and its impact on the financial performance of the company.

Figure (3): One Way Anova Test

| Ratio | Average | Variance | P value | F value | F crit | Level of Significance |
|-------------------------|---------|----------|-----------|---------|--------|-----------------------|
| Operating profit Margin | 0.1065 | 0.0041 | 0.0000e-8 | 51.2827 | 4.0981 | 0.05 |
| Net Operating profit | 0.0818 | 0.0013 | 3.13E-05 | 22.3145 | 4.0981 | 0.05 |
| Current Ratio | 1.2490 | 0.0632 | 1.65E-08 | 50.8070 | 4.0981 | 0.05 |
| Return on equity | 0.2230 | 0.0216 | 1.50E-08 | 51.2421 | 4.0981 | 0.05 |
| Asset Turnover Ratio | 0.9765 | 0.1113 | 1.60E-08 | 50.9281 | 4.0981 | 0.05 |

Source: Microsoft Excel

Figure (3) shows one way anova test between ethanol production and financial performance of the sugar companies. The calculated F table value is 4.0981 at a 0.05 level of the significance. The profitability ratios of the operating profit margin and net operating profit of the sugar mills F value 51.2827 and 22.3145 respectively which much higher than the table value of 4.1708, hence we rejected null hypothesis. This clearly picture out that there is significant relationship between the profit margin of the sugar mills with the revenue generated from distillery segment.

In the case of current Ratio of the selected sugar mills calculated p-value is 1.65E-08 which less than the level of significance of 0.05. Hence, alternative hypothesis accepted as the dependent of the liquidity is based on the revenue of the sugar mills during the study period.

Also, The Return on Equity has p value of 1.50E-08 smaller than the level of significance at

0.05. Hence, null hypothesis rejected and alternative hypothesis accepted as relation to the equity with distillery capacity of the sugar mills. The performance of asset turnover ratio is f value of 50.92 higher than the calculated table value of 4.0981, hence alternative hypothesis testing accepted. This test shown collectively impact of the particular net sales segment of ethanol capacity with performance of the sugar mills.

FINDINGS AND CONCLUSION:

We conclude from the research that the performance of the sugar mills is related to the revenue generated from the ethanol segment. Balrampur Chinni Mills Limited performance reported higher operations which reflects on

high profitability ratio of operating margin, net profit margin, and ROE with higher contribution of net sales from distillery segment which more attractive to shareholders as comparable with other peer competitors in sugar mills. The better management of assets utilization and rise in long-term borrowings under the government Scheme for enhancement of ethanol production capacity leads to generate enough revenue for the sugar mills. The companies need to improve the total assets utilization to generate more revenues from operation of goods.

The sugar industry shown as the positive operating profit margin as the diversification to by-products molasses which overcomes in economic slowdown. As the globally sugar cost of production to ₹18.50 per kilo turns which is less as compared the domestic market costing to be ₹36 per kilo. Therefore, I recommend that the export of sugar to dispose surplus stocks is not a viable solution whereas diversification in by-products will be better for long-term perspective. The corrective active action plan on the management can enhancement of ethanol production capacity which leads to generate enough revenue for the sugar mills.

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CUSTOMER SATISFACTION IN PUBLIC SECTOR BANKS: A CASE STUDY OF PUNJAB NATIONAL BANK

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ABSTRACT

Public sector banks are playing vital role in India. In this is due to Deposit scheme and extending loans. New private sector banks for foreign bank are coming in the banking sectors which increase competition. Public sector banks are assuming a Revolutionary part of Indian banking sector. Main objectives of Punjab national Bank is lending money variety of enterprises, according to their necessity, like sectors which constituting for agriculture, small-scale enterprise and many business enterprises. Punjab National Bank is a public sector bank under the Government of India regulated by Reserve Bank of India Act, 1934. This study is based on customer satisfaction. As we know that highly satisfied customer is a Crown factor f any banking sector. Public sector banks have a greater number of branches but private sector banks have good innovative products and services, there is a high risk of providing new services and it appeared to have lower spread as well the operating expenses in the public sector banks. Public sector banks upgrade their new products and services due to digitalization. For this research, case study data collected through questionnaire. The study is based on 100 respondents who are customers of Punjab National Bank. Customers are residing in Bilaspur city, Chhattisgarh. The survey was conducted in Bilaspur district. In this research paper author present a case study of Punjab National Bank for customer satisfaction.

Key Words: banks and public sector customer satisfaction, customer loyalty

INTRODUCTION:

Indian economy and Indian banking sectors are complementary to each other the economic development of country form of the core of money market and for this banking sector occupies as important place packing sector Dale thousands of customers every day and under them various type of services in fact customers are key success for any business No business exist without customers and customer loyalty show the brand value of the business and the role of particular Bank in to the sector due to new technology and digitalization banking and financial industry facing Rapid changes in the industry set of new challenges taken place banking sectors are customer oriented industry customer satisfaction represent number of both psychological and physical variable of service. That both can be highly satisfied the customers changing customer need and destination demand new strategy banking services quality and its marketing strategies are basic route of fulfilment of customer needs and detained customer for the long period since post independence banking industry seen drastic changes banking industry depend upon services and satisfaction of the customer and improve the service quality day by day.

Punjab National Bank: Punjab National Bank is a Indian nationalised bank. In 1894, Punjab National Bank found in Lahore Pakistan with Indian capital. This bank has over 80 million customers. 7001 branches across the country and 5 overseas branches. Punjab National Bank is a multinational banking company. Bank has consistency to retain its leadership and updated position among the Nationalised banks. Punjab National Bank has a good brand image and earned many awards. Punjab National Bank is a second largest government owned commercial bank. Punjab National Bank provide agency services like issuing the grid instrument cheque, circular notes, transfer of funds, purchase and sale of the securities, Collecting the interest and dividend, making the payments etc. In the general services of Punjab National Bank services are included, letter of credit, foreign exchange, mobile banking and MetLife etc.

Promotional tools used by Punjab National Bank: PNB has wide Network and offer product to customers:-

- E-services, BHIM, PNB Kitty, PNB Yuva unified payment interface, retail banking and corporate internet banking, RTGS/NEFT/IMPS/ECS/NACH and mobile banking green and debit card.
- Personal deposit loan retail MSME insurance government business Agricultural Banking priority sector
- Corporate loan, Exim Finance, Cash Management Services, gold card scheme, exporter, doorstep banking services, capital services Depository services, Mutual Fund and merchant banking, ASBA.

REVIEW OF LITERATURE

Anne M. Smith (1990) studied those four characteristics of services intelligibility inseparability heterogeneity and perishes ability. It impact on perception of customer for service quality. The study revealed that improving

service quality makes impact on the customer satisfaction and contributing to the profitability of financial service providers.

Liang et. Al. (2004) studied that quality of services has major impact on customer satisfaction level. There are two type of service quality, first is needed to products and second is non product. In his study he reveals that all products are made on the basis of different kind of perception of customer which positively gives benefit to customers.

Sarin and Anil (2007), in his study he recommended that the human resources have main role of service organisation. Positive attitude and behaviour affect the customers. Human power of bank must focus on satisfying the customers. Bank should trained staff members to improve the quality of services.

From the above, literature it is clear that there is the positive effect of customer satisfaction on the service quality and banks should improve their service quality and strategy to improve the customer satisfaction level

Objectives

- To analysing the customer satisfaction of Punjab National Bank
- To study the effectiveness of banking services on customer satisfaction
- To study the promotional tools used by the Punjab National Bank in Bilaspur city
- To access the degree of satisfaction of Punjab National Bank customer

Research Methodology

The survey is conducted to check the level of customer satisfaction and data collected from customers the study is carried out in Bilaspur district all responded belong to the Bilaspur district of Punjab National Bank and aware about the banking industry

Scope of the study

This study can find customer satisfaction level of Punjab National Bank in Bilaspur district. It confined the perception of customers who are residing in bilaspur district. Observation has been done through questionnaire. Researcher conducted survey and collected data.

Data Collection and tools

The data collected from primary sources through the survey and observation and the Data Collection focus the customers and group of the projective qualitative design the data collected from primary sources through the survey and observation and the questionnaire

Sample size: The Sample type is simple sampling, every member has equal chance to being selected, and therefore sample size was 100. Punjab National Bank's 100 customers were used in the research to analyse the satisfaction level.

Data Analysis

Table 1: Statement showing different level of customer satisfaction level of Punjab National Bank

| Banking services | Very dissatisfied | dissatisfied | satisfied | very satisfied | Highly satisfied | Not using service |
|------------------|-------------------|--------------|-----------|----------------|------------------|-------------------|
| Branch Banking | 5% | 8% | 47% | 40% | 0% | 0% |
| Internet Banking | 0% | 0% | 15% | 10% | 0 | 75% |
| Mobile Baking | 0% | 0% | 21% | 3% | 0% | 76% |
| ATM service | 6% | 8% | 48% | 12% | 0% | 26% |

Interpretation:

- Observation shows that only 21% customers are using mobile banking services and satisfied with the services 76% customers are not using the mobile banking services.
- 26% customers are not using the ATM facility and 48% are satisfied with the service
- Everyone is using the branch banking service and 47% are satisfied and 40% are highly satisfied.
- Internet service users are very less in Punjab National Bank only 25% customer using the internet banking where 15% satisfied and 10% highly satisfied.

- Many of customers are unaware about the mobile banking services.
- Behaviour and attitude of the staff member of the Punjab National Bank is major reason of dissatisfaction only 60% is satisfied with the behaviour of staff no one is highly satisfied
- Server failure and less up gradation of ATM machine is reason of the less satisfaction

CONCLUSION

This research shows that there is a significant relation of service and product of the bank to the customer satisfaction. If facilities are available, it facilitates customers in the branch. It must important to aware all the customers so they can use the facility. Customer's satisfaction is important to see improvement in banking service quality, it is very important to staff members. Banking manager should aware the entire employees of the bank to give proper knowledge of banking services and products to customers. It is recommended that public sector banking employees should know to respect the time of customers, without wasting of their time help them, and rendered them good services and attend the customer one to one, solve their problems and make them aware about new technology up gradation and satisfy them.

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STATUS OF GROUNDWATER ARSENIC CONTAMINATION IN RANGIA CIRCLE, ASSAM, INDIA

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ABSTRACT

Brahmaputra River that is originated from the Himalayas is arsenic contaminated. Arsenic can found in the groundwater of Brahmaputra valley in Assam because Assam valley is highly ferrous. The aim of this research paper is to investigate the level of arsenic contamination in groundwater. Primary data have been collected and tested in Tezpur University laboratory to know the value of arsenic in groundwater. Many water samples were contaminated with arsenic. Arsenic affects a broad range of organs and system including skin, nervous system, respiration system, liver, kidney, immune system etc. Arsenic poisoning occurs due to the high level of arsenic in the body. Interpolation method has been use to show the spatial distribution pattern of groundwater arsenic contamination with the help of Arc GIS 10.2.1. Rangia circle has arsenic contaminated groundwater. Many rural people of the study area use arsenic contaminated drinking water.

Key words: Arsenic, Contamination, Groundwater and Distribution Pattern

INTRODUCTION

Arsenic can be found in the groundwater of Rangia circle. Drinking water poses greatest threat to human health from arsenic. Groundwater is one of the safe and portable water of the world. In groundwater arsenic can be found through the dissolution of minerals and ores. Arsenic is naturally occurring chemical element that found in the earth crust with symbol As raised greatly concern from environment and health perspective. According to United States Environment Protection agency arsenic is a harmful substance and a group A- carcinogen. Arsenic is a group V heavy element which atomic number 33 and its atomic weight 74.9amu, specific gravity 5.73g/cm. Drinking water is one of the main source of arsenic. According to World Health Origination the limit of arsenic in drinking water is 10 million of a gram per liter (10µg/L) of water (WHO, 1996).

Arsenic occur in the environment in several oxidation states (-3, 0,+3 and +5) in both inorganic and organic forms. Trivalent arsenic can exist as arsenous oxide (As₂O₃), arsenious acid (HAsO₂), arsenite (H₂AsO₃⁻, HAsO₃²⁻, AsO₃³⁻) ions, arsenic trichloride (AsCl₃) and arsenite (AsH₃). In natural waters, arsenic is mostly found in inorganic form as oxyanions of trivalent arsenite As III or pentavalent arsenic As V. both As III and As V compounds are highly soluble in water. Bureau of Indian Standards (BIS) arsenic concentration in drinking water should not exceed 50 ppb. World Health Organization value for arsenic in drinking water is 10 ppb.

OBJECTIVES

Based on the background outlined above, the objectives for the paper are:

- (i) to understand the level of arsenic contamination in groundwater of Rangia circle of Assam

METHODOLOGY

For spatial distribution pattern of arsenic contamination groundwater samples have been collected from different sources like private and public tube wells from different areas of Rangia circle. The amount of arsenic present in the water has been analyzed by using arsenic test kit. Interpolation method has been used to show the vertical distribution of groundwater arsenic contamination in the study area. Primary data regarding impact of arsenic on human health has been collected with the help of field surveys through well design schedule.

STUDY AREA

Rangia circle has been selected for the study of vertical distribution of groundwater arsenic contamination.

RESULT AND DISCUSSION

Spatial distribution pattern of Groundwater arsenic contamination in Rangia circle

Following figure will show level of arsenic in different tube well samples (Figure 1).

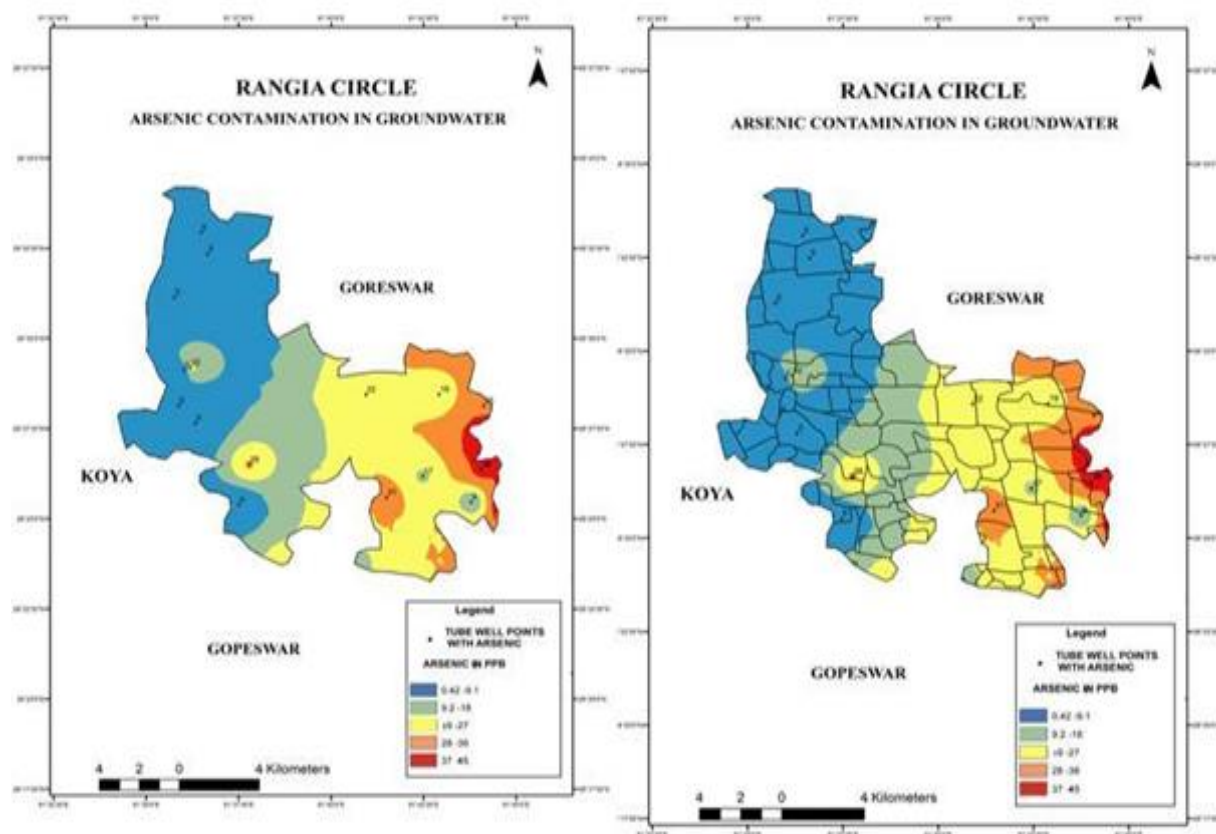


Figure 1: Spatial distribution of groundwater arsenic contamination

Level of groundwater arsenic contamination

Rangia Tehsil or circle

Rangia is a Tehsil or circle in Kamrup district of Assam. According to census 2011 total area of Rangia is 186 sq km. Rangia has a population of 1, 55,333 peoples. There are 34,016 houses in that area. There are 84 villages in Rangia.

Table 1: Groundwater arsenic contamination in Rangia circle, Kamrup

| Serial No. | Groundwater Arsenic in ppb | Area in sq km | Percentage |
|--------------|----------------------------|---------------|------------|
| 1 | 0.42-9.1 | 76 | 40.86 |
| 2 | 9.2-18 | 25 | 13.44 |
| 3 | 19-27 | 72 | 38.71 |
| 4 | 28-36 | 8 | 4.30 |
| 5 | 37-45 | 5 | 2.69 |
| Total | | 186 | 100 |

Source: Primary survey, 2021

About 16 tube well samples have been collected and tested from Rangia circle to analyze the groundwater arsenic contamination on that area. Out of the total geographical area 76 sq km area (40.86 per cent) has groundwater arsenic contamination less than 9.1 ppb. About 25 sq km area (13.44 per cent) has groundwater arsenic contamination between 9.2-18 ppb. Groundwater arsenic contamination between 19-27 ppb can be found in 72 sq km area (38.71 per cent) in Rangia. In the study area 8 sq km area (4.30 per cent) has arsenic contamination in groundwater between 28-36 ppb. Groundwater arsenic above 37 ppb can be found in 5 sq km area (2.69 per cent).

Health effect of arsenic in Rangia Circle

Epidemiological household survey has been conducted to study the effect of arsenic on human health in Rangia circle. Eleven arsenic affected villages have been selected for the study and all villages have arsenic contaminated groundwater more than 50 ppb. Table 2 will show incidence of arsenic related disease in the study area.

Table 2: Incidence of arsenic related disease

| Sl. No. | Village | Respiratory Disease | Skin Disease | Cancer | Nervous System Disease | Heart Disease | Number of Effected people |
|---------|----------------|---------------------|--------------|-----------|------------------------|---------------|---------------------------|
| 1 | Manik Nagar | 02(28.57) | 01(14.29) | 02(28.57) | 02(28.57) | 00(00.00) | 07(100) |
| 2 | Satgaon | 05(31.25) | 02(12.50) | 03(18.75) | 03(18.75) | 03(18.75) | 16(100) |
| 3 | Satgaon grant | 01(16.67) | 01(16.67) | 00(00.00) | 02(33.33) | 02(33.33) | 06(100) |
| 4 | Bar Nizara | 05(41.67) | 03(25.00) | 01(8.33) | 03(25.00) | 00(00) | 12(100) |
| 5 | Uttar Lenga | 06(46.16) | 02(15.38) | 02(15.38) | 01(7.70) | 02(15.38) | 13(100) |
| 6 | Dirgheswari | 07(38.89) | 05(27.78) | 03(16.67) | 02(11.11) | 01(5.55) | 18(100) |
| 7 | Fulung | 01(9.09) | 03(27.27) | 02(18.18) | 04(36.37) | 01(9.09) | 11(100) |
| 8 | Uttar Fulung | 03(42.85) | 02(28.57) | 01(14.29) | 01(14.29) | 00(00) | 07(100) |
| 9 | Dakshin Fulung | 06(40.00) | 02(13.33) | 03(20.00) | 03(20.00) | 01(6.67) | 15(100) |
| 10 | Rangmahal | 01(20.00) | 01(20.00) | 03(60.00) | 00(00.00) | 00(00) | 05(100) |
| 11 | Bamunigaon | 01(25.00) | 02(50.00) | 00(00) | 01(25.00) | 00(00) | 04(100) |
| | Total | 38(33.34) | 24(21.06) | 20(17.54) | 22(19.29) | 10(8.77) | 114(100) |

Source: Primary survey, 2021 (Figures in the parentheses indicate the percentage to the total number of effected people)

About 114 arsenic effected patients found in Rangia circle because the area has high levels of arsenic contamination in groundwater. Chronic arsenic exposure has been associated with a variety of respiratory symptoms such as chronic cough and shortness of breath, as well as the development of non- malignant respiratory diseases such as bronchiectasis and chronic and chronic obstructive pulmonary disease (COPD) in the circle. In addition to skin cancer, long-term exposure to arsenic may also cause cancers of the bladder and lungs. Arsenic exposure leads to both central and peripheral nervous system impairments and also causes depression.

In Rangia circle 38 persons (33.34 per cent) have respiratory disease due to arsenic poisoning. About 24 individuals (21.06 per cent) have skin disease due to use of arsenic contamination water. Number of cancer patients due to arsenic poisoning in the study area is 20 (17.54 per cent). About 22 persons (19.29 per cent) have nervous system disease in the study area. About 10 patients (8.77 per cent) have heart disease in the study villages. All these are arsenic related disease patients present in the study area. In Manik Nagar village 2 persons have respiratory disease, 1 person has skin disease and 2 persons have cancer disease due to arsenic poisoning. Satgaon village have 16 arsenic patients. Among all arsenic patients 5 persons have respiratory disease, 2 persons have skin disease, three patients have cancer and three persons have nervous system disease. All these diseases are related to arsenic poisoning. In Satgaon Grant village 1 person has respiratory problem, one person has skin disease, 2 persons have heart disease and two people have nervous system disease due to arsenic poisoning. In Bar Nizara village 5 persons have respiratory disease, 3 persons have skin disease, one person has cancer and 3 patients have nervous system disease. In Uttar Lenga village 13 persons have arsenic related diseases. Fulung, Uttar Fulung and Dakshin Fulung villages have 33 arsenic effected persons. In Rangmahal village 5 persons have arsen related disease and in Bamunigaon village 4 persons have arsenic related diseases. Most patients have respiratory disease due to use of high level arsenic contaminated drinking water All above mention disease are related to arsenic poisoning in the study area because groundwater arsenic level in very high.

CONCLUSION

Arsenic poisoning can occur due to arsenic contamination in drinking water. Ground water arsenic levels is different in different places. In study area tube well depth are different in different region. In some areas of Kamrup district tube wells depth is very shallow and in another area tube well depth is very deep up to 120 meters below ground level. In the study area groundwater is contaminated with arsenic and other organic matter. The area under arsenic concentration is also changes with time. With the passage of time arsenic contamination area also increases due to pressure in the groundwater. As a result of this incident of arsenic contaminated diseases also increases. More number of people is now affected with arsenic contaminated diseases in the study area. So it is very important to study temporal change in arsenic engulfed area and incident of arsenic contaminated diseases.

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**AN UPDATE OF THE POSSIBLE APPLICATIONS OF MAGNETIC RESONANCE IMAGING (MRI)
IN DENTISTRY: A LITERATURE REVIEW**

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ABSTRACT:

Background: This literature review aims to evaluate the current evidence for the application of magnetic resonance imaging (MRI), a radiation-free diagnostic exam, in some fields of dentistry, in which it had previously been little used. Radiographic imaging plays a significant role in current first and second level dental diagnostics and treatment planning. However, the main disadvantage is the high exposure to ionizing radiation for patients.

Methods: A search for articles on dental MRI was performed using the PubMed electronic database, and 37 studies were included. Only some articles about endodontics, conservative dentistry, implantology, and oral and craniofacial surgery that best represented the aim of this study were selected.

Results: All the included articles showed that MRI can obtain well-defined images, which can be applied in operative dentistry.

Conclusions: This review highlights the potential of MRI for diagnosis in dental clinical practice, without the risk of biological damage from continuous ionizing radiation exposure.

Keywords: magnetic resonance; imaging; MRI; dentistry; endodontics; implantology; maxillary sinus; dental materials; CBCT

SOVIET MODEL OF EDUCATION IN KYRGYZSTAN (1917-1990): A HISTORICAL PERSPECTIVE

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ABSTRACT

Throughout history, education has shaped societies and communities. The boom and fall of civilizations has been attributed to growth and failure of education. Almost every aspect of erstwhile Central Asia was influenced under soviet regime. After 1917, the Soviet government adopted a well developed educational policy to eliminate the backwardness among Central Asian societies and put them on the track of progressive socialist order. Consequently, a paramount success in Kyrgyz educational sector was achieved through the creation of a wide network of schools and universities which changed the nation considerably over a short period. The present paper is an attempt to highlight the soviet developmental strategies for creating so called invincible educational model in Kyrgyzstan. Analysis and evaluation of data and facts pertaining to education structure of Kyrgyz Republic during soviet period has been made.

Key Words: Socialist order; Marxist-Leninist thought; Kyrgyz Education; Vocational Education; Curriculum; Kandidat;

A CLINICAL STUDY IN THE MANAGEMENT OF DIABETIC FOOT ULCER WITH JALAUKAVACHARANA

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ABSTRACT

Context - Diabetic foot ulcers are a leading cause of amputations and affect more than 15% of people with diabetes (Brem and Tomic Canic, 2007) and precede 84% of all diabetes-related lower leg amputations (Reiber et al., 1995) The causes of increase in mortality are Micro and macro vascular complications, including failure of wound healing process. Risk factors are Diabetic neuropathy, Ischemia etc.

Content -Eight diabetic patients with foot ulcers were recruited randomly from Mahatma Gandhi Ayurved College & Research Centre. All the patients categorized under type-2 diabetes mellitus. The patients were known to have diabetes for 7 to 15 years and had the ulcers for 4 to 9 years without signs of healing. The subjects fall under low socioeconomic status group (SES-5) as per the criteria mentioned by Indian Council of Medical Research. None have recorded with smoking status either in the past or present. All the patients have undergone treatment previously in various Hospitals of Allopathy, Homeopathy, Ayurveda and allied systems. These patients were scheduled for amputation of the affected leg in their respective medical units. In this present preliminary study, the mean wound healing time (in days) was 22.37 ± 11.69 , 72.77% reduction in ulcer size was noted, 68.10% reduction in erythema and edema was noted and considerable re-epithelialization was observed after Jalaukavacharana. There was considerable reduction in discharge, odor and itching immediately after few weeks of leech therapy.

Conclusion -The results indicate that there is a marked decrease in ulcer size after Jalaukavacharana. A significant reduction in erythema, edema and increase in granulation was noted. The data indicates that Jalaukavacharana is effective in healing Chronic Diabetic wounds. Jalaukavacharana, one among the anusastra is safest and cost effective in the management of diabetic foot ulcers, for which billion dollars is spent worldwide in vain. This healing procedure should be propagated, so that millions of diabetic people can save their legs.

Keywords: - Amputation, Anushalya Karma, Diabetic foot ulcer, Jalaukavacharana

**IMPACT OF LABELLING & PACKAGING IN CREATING POSITIVE IMPRESSION OF THE
BRAND AMONG CONSUMERS**

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ABSTRACT

In the present era, consumers are day by day becoming more educated and conscious about the attributes related with the commodity and services. Among many attributes labelling and packaging are the most important aspects that will create a brand image. Brand gets popular and is mostly demanded by customers when they see on label that product is standardized or not, product is of expiry date or not, bar code of the goods and packaging for easily carrying of goods. In this study, the aspects of labelling and packaging will be covered that how it impacts the mind of consumers for any particular brand. As all the information of the product is mentioned on the labels and packings of the product, consumer can easily recognize the brand name from the logo, brand name, symbols. Apart from product features consumer will also be able to know what offers and schemes are being offered by the brand through labelling and packaging. A good packaging in itself can promote a product of any brand through its designing, colour, structure and convenience. Comparison of two different brands will also be possible for the consumer by information given on labelling and packaging of the commodity. If packaging will be good then chances of leakage or damaging of product will be lesser and ultimately it will also lead to good brand image.

Keywords: Labelling, Packaging, Brand, Standardized, Consumer

EFFECT OF MULCHING ON HARVEST INDEX OF GARDEN BEAN

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ABSTRACT

The present investigation on “Effect of mulching on harvest index of garden bean.” was taken up in a farmer’s field at Sendarapatti village. The experiments were conducted to find out suitable organic practices for augmenting the productivity of garden bean by adopting proper crop management practice involving solarisation with various amendments and nutrient management through various organic manures, in addition to proper weed management practices through various mulches. The experiment was laid out in a randomized block design with 8 treatments each replicated thrice. The selected treatment from previous experiment it was vermicompost @ 2.41 t ha⁻¹ (75 % N) + neem cake @ 0.22 t ha⁻¹ (25 % N) with Azospirillum and Phosphobacteria each @ 5 kg ha⁻¹ along with panchakavya @ 3 per cent for 4 times for garden bean. Various mulches viz., sugarcane trash, bio-mulch (coriander 15 DAS), coirpith and straw mulch were used after transplanting. The treatment schedule included laying such mulches, soil application of fluchloralin @ 1.5 kg a.i ha⁻¹, fluchloralin @ 1.5 kg a.i ha⁻¹ + hand weeding once and practice of hand weeding twice along with a control. Among the treatments, application of fluchloralin (Basalin) @ 1.5 Kg a.i ha⁻¹ along with hand weeding. This was found to be on par with fluchloralin (Basalin) @ 1.5 Kg a.i ha⁻¹ alone. application of fluchloralin followed by hand weeding twice recorded the significant results in garden bean. However, hand weeding twice followed by application of fluchloralin with one hand weeding recorded the maximum value for harvest index. Both the treatments were influencing the traits at the same level. This was closely followed by sugarcane trash mulching which was found to be on par with fluchloralin @ 1.5 Kg a.i ha⁻¹ alone. The harvest index was higher due to the application of sugarcane trash mulching when compared to other treatments. Regarding the harvest index, hand weeding practice twice followed by sugarcane trash mulching recorded the highest value as harvest index.

Keywords: Sugarcane Trash, Biomass Production, Fluchloralin And Vermicompost dolichos bean and harvest index.

INTRODUCTION

Vegetables provide a good source of income to the growers because they are quick growing and give immediate returns to the growers. They play an important role in human nutrition by providing not only the energy rich food but also promise the supply of vital nutrients like minerals and vitamins. In the recent years, the importance of growing and consuming vegetables for the maintenance of normal health is being realized in all parts of the world and a consciousness for improving quality and quantity has also been developed (Anon, 2014).

The world’s vegetable area accounts for 56.69 million hectares and production is around 1087.59 million tonnes. The largest producer of vegetables in the world is China, accounting for 146.55 million tonnes of annual production; followed by India, with a production of around 60.473 million tonnes (Anon, 2016a). As per statistics of National Horticultural Board, the major vegetable producing states in India are West Bengal, Uttar Pradesh, Bihar, Odisha, Karnataka, Gujarat, Andhra Pradesh and Tamil Nadu contributing around 86% of total area of vegetable crop cultivation in the country. The area and production of vegetables in the year 2015-16 was 9.29 million hectares and 16.64 lakh tonnes. The area under Tamil Nadu was 90,533 ha and the production was 8,33,850 lakh tonnes. The major vegetables producing districts in Tamil Nadu are Coimbatore, Ramanathapuram, Tuticorin, Tirunelveli, Virudunagar, Kanyakumari, Madurai, Salem, Tiruchi, Villupuram and Cuddalore (Anon, 2016).

Indiscriminate use of chemical fertilizers, pesticides and herbicides has led to the deterioration of soil health, ground water quality, soil microbial population, atmospheric constituents, quality of the agricultural produce and thereby the health of animals and humans. Soil organic matter is a vital component of the soil that controls the physical, chemical and biological properties to a large extent. Hence now the emphasis is given for the use of organic resources and non-chemical management practices to maintain the soil quality and environmental health in order to produce high quality produce.

MATERIAL AND METHODS

The experiment was laid out in a randomised block design with Eight treatment each replicated thrice. nutrient schedule of treatment T₇ -75% of T₃(Vermicompost @1.18 t ha⁻¹ + Neemcake @ 0.71 t ha⁻¹)+*Azospirillum* + Phosphobacteria (5 kg each ha⁻¹)+Panchakavya @ 3% + Fluchloralin (Basalin) @ 1.5 kg ha⁻¹a.i was followed uniformly for all the treatments. Here mulching was done 20 days after sowing.

RESULT

Weight of pods plant⁻¹

Significant positive variation was exhibited by all the treatment for weight of pods plant⁻¹ when compared to control. The highest responses was noticed in the treatment T₆ (hand weeding twice@30 DAT and 60 DAT) which recorded 77.41 percent increased pod weight when compared to control. This was followed by T₈ which was significant in increasing the weight of pods plant⁻¹ to a tune of 74.80 percent when compared to a control. However the treatment T₂ and T₇ were insignificant in exhibiting differences for this trait (table 1)

Weight of whole plant

The weight of whole plant was significantly influenced by all the treatment when compared to control. Among the treatments, desirable the highest weight of whole plant (455.12g) was observed in the treatment T₆ followed by T₈(437.89g). The next best value was in the treatment T₂(431.52). Which exhibited insignificant differences with T₇(430.25g) value of 268.19 g was observed in the control (T₁) (table 1)

Harvest index

The values for the harvest index was the harvest (54.90) in the treatment T₆ followed by T₆ followed by T₈ (53.58).

Table.1. Effect of mulching on weight of pods per plant, weight of whole plant and harvest index in garden bean

| Treatment | Weight of pods plant ⁻¹ (g) | Weight of whole plant | Harvest index |
|---|--|-----------------------|---------------|
| T ₁ – Control | 132.72 | 268.19 | 19.04 |
| T ₂ - Sugarcane trash mulch (10 cm thickness @ 12.5 t ha ⁻¹) | 314.22 | 431.52 | 49.35 |
| T ₃ - Straw mulch (10 cm thickness @ 12.5 t ha ⁻¹) | 290.71 | 417.63 | 41.47 |
| T ₄ - Coirpith mulch (2 cm thickness @ 12.5 t ha ⁻¹) | 295.17 | 416.92 | 43.98 |
| T ₅ - Bio - mulch (coriander was sown 15 DAS maincrop) | 286.18 | 490.25 | 45.26 |
| T ₆ Hand weeding twice @ 30 DAS and 45 DAS | 340.15 | 455.12 | 54.90 |
| T ₇ – Fluchloralin (Basalin) @ 1.5 kg ha ⁻¹ a.i | 313.71 | 430.25 | 47.13 |
| T ₈ - Fluchloralin (Basalin) @ 1.5 kg ha ⁻¹ a.i + one hand weeding @ 30 DAT | 327.13 | 437.89 | 53.58 |
| S.ED | 1.64 | 1.95 | 1.121 |
| CD (P=0.05) | 3.32 | 3.47 | 2.242 |

The next best value was observed in treatment T₂ (49.35) followed by T₇ (47.13) the least harvest index of (19.04) was observed in the control (T₁) as presented in the table.1

DISCUSSION

The yield attributes such as bio mass production and fruit yield were maximum under the treatments, hand weeding twice followed by herbicide application– fluchloralin (1.5 kg a.i. ha⁻¹) with one hand weeding. Both the treatments were found to be on par with each other. This was closely followed by application of sugarcane trash mulching among the various organic mulches tried. Increase in yield attributes due to application of sugarcane trash mulch might be due to adequate supply of moisture and nutrients which may be altered by controlling weeds due to mulching as reported by Kathiresan *et al.*, (1991). Santappa and Viswanatham (1972) reported that effective soil moisture retention was more pronounced with mulching which had a favourable effect on growth components such as plant height and dry matter production which in turn increased the yield. The superiority of the sugarcane trash mulching over other mulching treatments might be attributed to the higher density over the soil thereby effectively conserving moisture and nutrients, and reducing the weed population ultimately resulted in increased the yield over straw and coir waste mulching. Similar results of increase in yield with sugarcane trash mulching is in concordance with the findings of Rajbir Singh *et al.* (2005) in tomato and Manrique *et al.* (2010) in French bean .

CONCLUSION

On the basis of the above results, In garden bean it was 2.41 t/ha vermicompost, 0.22 t/ha neem cake, and in baby corn the nutrient schedule was 10.03 t/ha vermicompost, 0.73 t/ha neem cake with biofertilizers, panchakavya 3% sprays and sugarcane trash mulching 12.5 t/ha for satisfied harvest index of garden bean.

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STANDARDIZATION OF ORGANIC PRACTICES FOR QUALITY ENHANCEMENT IN GARDEN BEAN

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ABSTRACT

The present investigation on “standardization of organic practices for yield and quality enhancement in garden bean ” was taken up in a farmer’s field at Sendarapatti village. The experiments were conducted to find out suitable organic practices for augmenting the productivity of garden bean by adopting proper crop management practice involving solarisation with various amendments and nutrient management through various organic manures, in addition to proper weed management practices through various mulches. It was vermicompost @ 2.41 t ha⁻¹ (75 % N) + neem cake @ 0.22 t ha⁻¹ (25 % N) with Azospirillum and Phosphobacteria each @ 5 kg ha⁻¹ along with panchakavya @ 3 per cent for 4 times for garden bean. Various mulches viz., sugarcane trash, bio-mulch (coriander 15 DAS), coirpith and straw mulch were used after transplanting. The treatment schedule included laying such mulches, soil application of fluchloralin @ 1.5 kg a.i ha⁻¹, fluchloralin @ 1.5 kg a.i ha⁻¹ + hand weeding once and practice of hand weeding twice along with a control. Among the treatments, application of fluchloralin (Basalin) @ 1.5 Kg a.i ha⁻¹ along with hand weeding once, desirably reduced the weed population, weed biomass and recorded the was observed under sugarcane trash mulching @ 12.5 t ha⁻¹ in garden bean (30 and 45 DAS). This was found to be on par with fluchloralin (Basalin) @ 1.5 Kg a.i ha⁻¹ alone. This was closely followed by sugarcane trash mulching which was found to be on par with fluchloralin @ 1.5 Kg a.i ha⁻¹ alone. The quality characters were higher due to the application of sugarcane trash mulching when compared to other treatments.

Keywords: Garden bean, Fluchloralin, TSS, protein and fibre content, Sugarcane Trash Mulch, Neem Cake and Vermicompost

INTRODUCTION

Vegetables provide a good source of income to the growers because they are quick growing and give immediate returns to the growers. They play an important role in human nutrition by providing not only the energy rich food but also promise the supply of vital nutrients like minerals and vitamins. In the recent years, the importance of growing and consuming vegetables for the maintenance of normal health is being realized in all parts of the world and a consciousness for improving quality and quantity has also been developed (Anon, 2014). Indiscriminate use of chemical fertilizers, pesticides and herbicides has led to the deterioration of soil health, ground water quality, soil microbial population, atmospheric constituents, quality of the agricultural produce and thereby the health of animals and humans. Soil organic matter is a vital component of the soil that controls the physical, chemical and biological properties to a large extent. Hence now the emphasis is given for the use of organic resources and non-chemical management practices to maintain the soil quality and environmental health in order to produce high quality produce.

METHODS**Protein content**

The amount of protein present in the pods were estimated by Lowry’s method (1951) and was expressed in percentage for all the treatments.

Fibre content

The amount of fibre present in the pods were estimated following the method suggested by Patricia Cenniff (1993) and was expressed in percentage for all the treatments.

RESULTS**Quality characters****Protein content**

The protein content varied from 13.80 to 18.59 % in among the treatments. The highest value was noticed in T₂ (18.59) followed by T₆ (18.10%). The lowest value was noticed in T₁ (13.80) followed by T₇ (17.29%) the lowest value was recorded in T₁ (13.80%). (Table1)

Fibre content

The fibre content varied from 14.47 to 15.99% in among the treatments. The highest value was noticed in T₂ (15.99%) followed by T₆ (15.80%) the lowest value was recorded in T₁ (14.47g 100⁻¹). (Table 1).

Table.1. Effect of mulching on protein and fibre content in garden bean

| Treatment | Protein content (%) | Fibre content (%) |
|---|---------------------|-------------------|
| T ₁ – Control | 13.80 | 14.47 |
| T ₂ - Sugarcane trash mulch (10 cm thickness @ 12.5 t ha ⁻¹) | 18.59 | 15.99 |
| T ₃ - Straw mulch (10 cm thickness @ 12.5 t ha ⁻¹) | 17.72 | 15.45 |
| T ₄ - Coirpith mulch (2 cm thickness @ 12.5 t ha ⁻¹) | 17.60 | 15.35 |
| T ₅ - Bio - mulch (coriander was sown 15 DAS maincrop) | 17.49 | 15.12 |
| T ₆ Hand weeding twice @ 30 DAS and 45 DAS | 18.10 | 15.80 |
| T ₇ – Fluchloralin (Basalin) @ 1.5 kg ha ⁻¹ a.i | 17.29 | 15.58 |
| T ₈ - Fluchloralin (Basalin) @ 1.5 kg ha ⁻¹ a.i + one hand weeding @ 30 DAT | 17.37 | 15.68 |
| S.ED | 0.06 | 0.05 |
| CD (P=0.05) | 0.12 | 0.10 |

DISCUSSION

It is interesting to note that the quality characters such as ascorbic acid, and acidity in tomato were improved due to the application of sugarcane trash mulching. The improvement in quality may also probably due to the results of higher nitrogen availability and low temperature under organic mulches as reported by Gormley *et al.*, (1973) and Olaniyi *et al.*, (2008). Appreciable improvement in fruit quality by various organic mulching treatments might also be associated with increase in conserving moisture which ultimately caused mobilization of soluble carbohydrates to the storage organs. (Nath and Sharma, 1994).

CONCLUSION

The experiment was conducted to find out suitable organic practices for augmenting the productivity of garden bean by adopting proper crop management practice involving solarisation with various amendments and nutrient management through various organic manures, in addition to proper weed management practices through various mulches. It was vermicompost @ 2.41 t ha⁻¹ (75 % N) + neem cake @ 0.22 t ha⁻¹ (25 % N) with *Azospirillum* and *Phosphobacteria* each @ 5 kg ha⁻¹ along with panchakavya @ 3 per cent for 4 times for garden bean. was identified as the best organic way of improving quality production in garden bean

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EFFECT OF MULCHING ON ECONOMIC BENEFITS OF GARDEN BEAN

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ABSTRACT

The experiment February 2012 to study the impact of mulching in comparison with conventional and chemical method of weed management practices on the weed management of garden bean. The experiments was laid out in a randomized block design with 8 treatments each replicated thrice. Various mulches viz., sugarcane trash, bio-mulch (coriander 15 DAS), coirpith and straw mulch were used after after sowing. The treatment schedule included laying such mulches, soil application of fluchloralin @ 1.5 kg a.i ha⁻¹, fluchloralin @ 1.5 kg a.i ha⁻¹ + hand weeding once and practice of hand weeding twice along with a control. Among the treatments, application of fluchloralin (Basalin) @ 1.5 Kg a.i ha⁻¹ along with hand weeding once. Among the various organic mulches tried, the highest range of benefit cost ratio was observed under sugarcane trash mulching @ 12.5 t ha⁻¹ garden bean (30 and 45 DAS).

Keywords: sugarcane trash mulching, benefit cost ratio, fluchloralin and garden bean`

INTRODUCTION

Vegetables provide a good source of income to the growers because they are quick growing and give immediate returns to the growers. They play an important role in human nutrition by providing not only the energy rich food but also promise the supply of vital nutrients like minerals and vitamins. In the recent years, the importance of growing and consuming vegetables for the maintenance of normal health is being realized in all parts of the world and a consciousness for improving quality and quantity has also been developed (Anon, 2014).

The world's vegetable area accounts for 56.69 million hectares and production is around 1087.59 million tonnes. The largest producer of vegetables in the world is China, accounting for 146.55 million tonnes of annual production; followed by India, with a production of around 60.473 million tonnes (Anon, 2016a). As per statistics of National Horticultural Board, the major vegetable producing states in India are West Bengal, Uttar Pradesh, Bihar, Odisha, Karnataka, Gujarat, Andhra Pradesh and Tamil Nadu contributing around 86% of total area of vegetable crop cultivation in the country. The area and production of vegetables in the year 2015-16 was 9.29 million hectares and 16.64 lakh tonnes. The area under Tamil Nadu was 90,533 ha and the production was 8,33,850 lakh tonnes. The major vegetables producing districts in Tamil Nadu are Coimbatore, Ramanathapuram, Tuticorin, Tirunelveli, Virudunagar, Kanyakumari, Madurai, Salem, Tiruchi, Villupuram and Cuddalore (Anon, 2016).

Indiscriminate use of chemical fertilizers, pesticides and herbicides has led to the deterioration of soil health, ground water quality, soil microbial population, atmospheric constituents, quality of the agricultural produce and thereby the health of animals and humans. Soil organic matter is a vital component of the soil that controls the physical, chemical and biological properties to a large extent. Hence now the emphasis is given for the use of organic resources and non-chemical management practices to maintain the soil quality and environmental health in order to produce high quality produce.

MATERIAL AND METHODS

Experimental details

The experiment was laid out in a randomised block design with Eight treatment each replicated thrice. nutrient schedule of treatment T₇ -75% of T₃(Vermicompost @1.18 t ha⁻¹ + Neemcake @ 0.71 t ha⁻¹)+Azospirillum + Phosphobacteria (5 kg each ha⁻¹)+Panchakavya @ 3% + Fluchloralin (Basalin) @ 1.5 kg ha⁻¹a.i was followed uniformly for all the treatments. Here mulching was done 20 days after sowing.

Statistical analysis

The data of the observations made in all experiments were statistically analyzed. Where ever the results were found to be significant, the critical difference was worked out at five per cent level to draw statistical conclusions (Panse and Sukhatme, 1978).

RESULT AND DISCUSSION

Considering the yield and return per rupee invested, hand weeding practice twice followed by sugarcane trash mulching, showed higher benefit cost ratio (Dass. *et al* 2008 and Meena *et al.*, 2008) Further, under sugarcane trash mulching such highest benefit cost ratio is expected to widen due to recycling the organic mulches and improved activity of soil micro organisms due to conducive microclimate, and improved soil fertility status due to the presence of micro organisms and avoidance of weedicides which reduce might the cost of inputs. (Asaduzzaman *et al.*, 2010). From the result of all the experiments, it could be concluded that the organic practices such as solarization with vermicompost along with *Azospirillum* treatment in nursery was identified as the best nursery treatment for improving the performance of tomato seedlings. In the solarized main field tomato. Application of vermicompost @ 10.50 t ha⁻¹ + neem cake @ 0.73 t ha⁻¹ with *Azospirillum* and Phosphobacteria @ 5 kg ha⁻¹ along with panchakavya 3 per cent spray for 4 times from 30 days after transplanting at 20 days interval would be the best organic nutrient management practice for tamato. In addition, sugarcane trash mulching @ 12.5 t ha⁻¹) was identified as the best organic way of weed management practice. These organic practices in nursery and main field were identified as the best for increasing the productivity with premium quality, besides obtaining higher ecological benefits, improving the soil health and also for getting premium price. Sadasivam Thus it is established that complete omission of inorganic fertilizer is possible without sacrificing the yield. Since these organic practices were tried for one season, the yield was little higher than inorganic fertilizers. If it is constantly practiced, there is definite chance for greater increase in the soil fertility and sustained production with lesser requirement of organic inputs. By the way, there must be an increase in the productivity with lower cost and ultimate increase in income. The same result repoted by Prabhakar et al 2013 and Sadasivam.,1995

Table.1. Benefit cost ratio of Experiment IX

| Treatment | Cost of cultivation (Rs) | Gross Income (Rs) | Net Income (Rs) | BCR |
|---|--------------------------|-------------------|-----------------|-----|
| T ₁ – Control | 14400 | 18720 | 4320 | 1.3 |
| T ₂ - Sugarcane trash mulch (10 cm thickness @ 12.5 t ha ⁻¹) | 40645 | 113806 | 73161 | 2.8 |
| T ₃ - Straw mulch (10 cm thickness @ 12.5 t ha ⁻¹) | 40545 | 93253 | 52708 | 2.3 |
| T ₄ - Coirpith mulch (2 cm thickness @ 12.5 t ha ⁻¹) | 40240 | 88528 | 48288 | 2.2 |
| T ₅ - Bio - mulch (coriander was sown 15 DAS maincrop) | 40921 | 81842 | 40921 | 2.0 |
| T ₆ Hand weeding twice @ 30 DAS and 45 DAS | 40945 | 12835 | 81890 | 3.0 |
| T ₇ – Fluchloralin (Basalin) @ 1.5 kg ha ⁻¹ a.i | 40425 | 88935 | 48510 | 2.2 |
| T ₈ - Fluchloralin (Basalin) @ 1.5 kg ha ⁻¹ a.i + one hand weeding @ 30 DAT | 40745 | 118160 | 77415 | 2.9 |

The treatment T₆ recorded the highest value of 3.0 as return per rupee invested, followed by T₂ which recorded the income of Rs. 73,161.80 and the value for benefit cost ratio was 2.8 the treatment T₁ recorded the lowest value for BCR (1.30) (table1).

CONCLUSION

On the basis of the above results, it could be concluded that In the garden beanfield, application of sugarcane trash mulching @ 12.5 t ha⁻¹ was identified as the best organic way of high value of benefit cost ratio in garden bean.

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AN INVESTIGATION ON CUSTOMER SATISFACTION AND SERVICE QUALITY IN PRIVATE SECTOR BANKS

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ABSTRACT

Today's digital world has completely changed the way people are using the services specially the digital or online service. The changing lifestyles, better education, increased income levels, with more women taking up jobs, information availability has not only changed their expectations but also the way perceive the quality of the service provided. In the banking sector too we have witnessed tremendous changes from the time digital technology was introduced creating a lot of competition among public and private sector banks. Service quality is a major determinant of customer satisfaction leading to customer loyalty in their endeavor to provide better service banks have to focus more on factors influencing service quality. Most of studies related to service quality have thrown light on the influence of demographic factors on service quality dimensions.

In order to capture the market by enhancing the degree of customer satisfaction, private sector banks are expected to provide quality services through dedicated employees and sophisticated technology. The paper makes a modest attempt not only to assess the customer perception regarding various service quality dimensions but also to analyse the influence of perceived service quality on satisfaction of customers in the branches of private sector banks operating in Panipat District of Haryana. The perception of bank customers on select dimensions of service quality has been analyzed using different statistical tools. The study concludes that all the dimensions of service quality significantly influence the satisfaction of bank customers except empathy dimension.

Keywords: Responsiveness, Assurance, Reliability, Empathy, Tangibility and Service Quality

INTRODUCTION

Indian Banking industry is going through many changes due to revolution in technology and especially due to digital and social media. The Public sector banks are competing with private players to provide satisfaction through better service quality. Tremendous amount of information available online and the social media have increased the significance of customer experience and reviews. This has led to change in the customer perception of services. Of-late customer perception has been changing with time, with changing trends in technologies. Perceptions are shaped by the world we live. They are reflection of our personality. Perceptions differ and are influenced by individual's background, income and their lifestyles. Difference in the perception of users and providers of service is posing a major problem as service quality adds value making measuring and managing it vital for banks.

Service quality is a recent and more dynamic decisive issue in the marketing thought. It also helps control the competitive position and consequently determines the market share and profits. Therefore, the ability of banks to continue and survive in the market depends on their ability to respond to the requirements of change and interact with the output of it. As the customers' needs and wishes are shaped and formed in the light of their economic, social and civilization conditions, there is a close relationship between the banks' ability to continue and survive and their ability to produce services that fit in with the increasing and changing needs of the customers. Hence, service organizations, especially banks, work hard to find effective ways to counter external changes in order to survive and they enhance their effectiveness by means of activating their services and creating and developing new ones.

Customer satisfaction is a measure of extent the existing bank is fulfilling the general expectations of a customer and how far and/or close does the existing bank come to the customer's ideal bank in his mind (Beerli, et. al., 2004). Customer satisfaction can be viewed as the future intentions of customers towards the service provider, which is more or less related to the attitude. Customers perceive services in terms of the quality of the service and how satisfied they are overall with their experiences (Zeithaml and Bitner, 2003). Satisfaction is the consumer's fulfillment response (Oliver, 1997). Customer satisfaction is influenced by price, product quality; service quality and brand image. Recently, there has been a keen interest, especially in banking, where banks are looking at the life time value of the customer base rather than focusing on the cost of transactions.

With the entry of new generation private banks, the banking sector has become too competitive. To deal with the emerging situations, bankers have to shed a lot of old ideas, change in practices, develop customer loyalty

programmes and adopt a distinct approach to meet the challenges ahead. In a fiercely competitive market, non-price factors like customer service become more important (Kotler, 2003). Hence, it is desirable for new private banks to develop a customer-centric approach for future survival and growth. The awareness has already dawned that prompt, efficient and speedy customer service alone will tempt the existing customers to continue and induce new customers to try the services offered by a new private bank. With this background, the present research is attempted to study the service quality perspectives and customer satisfaction in private sector banks in Panipat District.

LITERATURE REVIEW

Service sector of an economy faces a continuous challenge of managing the quality of service they provide. With the expanding consumer base as well as growing competition, even banking sector is becoming customer driven. Therefore, nowadays banking institutions focus on analyzing satisfaction levels of customers and try to adopt differentiation in their services. Some researches done in this area are described below.

- **Karim and Cowling (1996)** defined quality as anything that accorded with the characteristics of the product to meet the external clients' needs. In addition, the product quality differed from that of a service as the earlier was tangible, whereas the latter was intangible. The American Society for Marketing defined service as activities or benefits that were offered for sale or that were offered for being related to a particular product.
- **Aurora and Malhotra (1997)** made efforts to study level of customer satisfaction and marketing strategies adopted in public and private sector banks in India. Their study explored various factors of satisfaction in these banks and concluded that customers are more satisfied with private banks mainly because of the staff factor. They suggest public sector banks to be well equipped, have trained staff, personalize the services provided, avoid long queues, and keep their environment attractive.
- **Varghese (2000)** conducted a study to compare public and private sector banks of Kerala. He considered two banks from each category and analyzed their performance. The study revealed that there exist no major differences between services of public and private sector banks. Also, banks in both the sectors adopt similar internal marketing strategies.
- **Devlin (2001)** pointed out that "customers perceive very little difference in the services offered by retail banks and any new offering is quickly matched by competitors." Jamal and Naser (2003) found that relational and core features of bank's quality of service appeared to be linked to customer satisfaction. The perspective proposes that satisfied customers made favourable quality judgments about services, because such customers' judge things in higher quality due to positive affect they have experienced (Gilbert, et. al., 2004).
- **Bodla (2004)** examined four private sector banks and four public sector banks of Chandigarh, Delhi and Haryana in order to assess their service quality. He concluded that expectations and perceptions of customers differ significantly in the banks of these two sectors. Israel, Clement, and Selvam (2004) made similar attempt to analyse service quality of banks. Their study identified that marketing efforts and performance of banks in public sector are less efficient than in private sector, but when it comes to reliability and security public sector banks are trusted more over private sector banks.
- **Huseyin, et. al., (2005)** believed that good knowledge of the characteristics and advantages of service quality on the part of banks did contribute for their success and their persistence in the international banking competitive environment. Thus, the quality of banking service was an integrative assessment of the services offered to the external client, for clients were considered to be independent individuals with various requirements on the basis of which services were provided, based on certain specification.
- **Sudesh (2007)** analysed service quality of banks in India and reported that services of public sector banks are of poor quality. These banks are rated low for tangibility, responsiveness and empathy when compared to private sector banks. The study also suggested that management should keep a close watch on potential failure points and should make efforts to solve customer problems promptly.
- **Singh and Arora (2010)** studied the factors effecting customer satisfaction with the quality of services. The study was conducted in some selected branches of public and private sector banks of Delhi. The respondents reported that they were not satisfied with the employee behavior and infrastructure of public sector banks. While private sector services were perceived to be cost with lack of accessibility and communication.

- **Lohani and Shukla (2012)** focused on banks in Lucknow city and concluded that customers perceive services of private sector banks to be of superior quality than banks in public sector.
- **Simon (2012)** studied customers' perception with respect to service quality of public sector and private sector banks in Coimbatore. She concluded that private sector banks give tough competition to public sector banks by providing better quality and range of services to customers.
- **Virk and Mahal (2014)** presented a comparative analysis of level of customer satisfaction towards services provided by public and private sector banks in Chandigarh city. They identified that customers prefer private sector banks mainly because of two reasons, firstly these banks focus on building and maintaining good relationship with their clients and secondly as they are well equipped with the use of modern technology as compared to banks in public sector.
- **Gill and Arora (2017)** conducted a comparative analysis of level of customer satisfaction towards Services provided by public and private sector banks. Two public sector banks selected for the study include Punjab and Sind Bank and Union Bank of India and the private banks include HDFC bank and IDBI bank. Primary survey of 200 customers was conducted using convenient sampling method in three major cities of Punjab namely Amritsar, Jalandhar and Ludhiana. It was analyzed that private banks need to work on gaining faith of customers as customers still don't feel secured while dealing with terms and conditions given by private banks whereas public banks enjoy the hierarchical trust as they are older in Indian financial system. Further study revealed that public banks need to work more on technology and overall décor to survive in the market.
- **Franklin and Arul (2019)** surveyed banks of Chennai city and compared satisfaction and expectation of consumers of public and private sector banks. They reported that service gap of private sector is better than public sector across all service dimensions except assurance. Public sector banks must concentrate on improving their performance in order to maintain their market share in Chennai.

OBJECTIVES OF THE STUDY

1. To assess the perceived service quality in the branches of private sector banks operating in Panipat District of Haryana.
2. To examine the relationship between perceived service quality and customer satisfaction in the branches of private sector banks operating in Panipat District.
3. To study the influence of perceived service quality on customer satisfaction in the branches of private sector banks operating in Panipat District.

HYPOTHESES OF THE STUDY

1. There exists no significant correlation between perceived service quality and customer satisfaction in the branches of private sector banks operating in Panipat District.
2. There exists no significant influence of perceived service quality on customer satisfaction in the branches of private sector banks operating in Panipat District.

RESEARCH METHODOLOGY

Among the different districts in Haryana, the Panipat city has been purposively selected followed by new private sector banks and customers for the present study. The 400 customers of Axis bank, HDFC bank, ICICI bank and Yes bank have been selected for the present study by adopting multi stage random sampling technique and the data and information pertain to the year 2020-2021. The service quality is assessed based on Parasuraman, *et. al.*, 's (1988) five dimensions namely, tangibility, reliability, responsiveness, assurance and empathy. All questions are measured on 5-point Likert scale where "1=strongly disagree", "2= disagree", "3=neutral", "4=agree", and "5=strongly agree".

The overall customer satisfaction is measured by one item question: "Overall, how satisfied are you with the bank?" The responses are made on scale labeled "very satisfied" and "very dissatisfied" at both extremes. The problems associated with the use of a single response variable are moderated by the simplicity of the question and Yi's (1990) suggestion that a single overall satisfaction measure scored as this one was is "reasonably valid". In order to accomplish the objectives, the descriptive statistics, correlation analysis and multiple regressions have been applied.

RESULTS AND DISCUSSION

Socio-Economic Characteristics of Customer

The socio-economic characteristics of customers of new private sector banks were analyzed and the results are presented in **Table-1**. The results show that about 64.25 per cent of the customers are males and the rest of 35.75 per cent of the customers are females. The results indicate that about 46.25 per cent of the customers belong to the age group of 30-40 years followed by 20-30 years (24.50 per cent), 40-50 years (17.75 percent) and 50-60 years (11.50 per cent). It is clear that the majority of the customers (33.50 per cent) are post graduates followed by professionals (26.50 per cent), graduates (25.50 per cent) and higher secondary (14.50 percent).

It is apparent that about 39.50 per cent of the customers are salaried followed by self-employed (23.50 percent), professional (21.50 per cent) and business (15.50 per cent). It is observed that about 41.00 per cent of the customers belong to the monthly income group of Rs.20000-30000 followed by Rs. 30000-40000 (27.50 percent), Rs. 10000-20000(18.00 per cent) and Rs. 40000- 50000 (13.50 per cent).

Table-1: Socio-Economic Characteristics of Customer

| Particulars | Frequency | Percent (%) |
|----------------------------------|-----------|-------------|
| Gender | | |
| Male | 257 | 64.25 |
| Female | 143 | 35.75 |
| Age (Years) | | |
| 20-30 | 98 | 24.50 |
| 30-40 | 185 | 46.25 |
| 40-50 | 71 | 17.75 |
| 50-60 | 46 | 11.50 |
| Educational Qualification | | |
| Higher Secondary | 58 | 14.50 |
| Graduates | 102 | 25.50 |
| Post Graduates | 134 | 33.50 |
| Professionals | 106 | 26.50 |
| Occupation | | |
| Business | 62 | 15.50 |
| Self-Employed | 94 | 23.50 |
| Salaried | 158 | 39.50 |
| Professional | 86 | 21.50 |
| Monthly Income (Rs.) | | |
| 10000-20000 | 72 | 18.00 |
| 20000-30000 | 164 | 41.00 |
| 30000-40000 | 110 | 27.50 |
| 40000-50000 | 54 | 13.50 |

Service Quality Dimensions and Reliability

The descriptive statistics of mean and standard deviation of service quality dimensions and overall satisfaction of customers were worked out and the results are presented in Table-2. The customers of new private sector banks perceive responsiveness (M=3.82) is to be the most dominant service quality followed by reliability (M=3.80), tangibles (M=3.74), assurance (M=3.72) and empathy (3.68) in the order of importance based on the mean values of each service quality dimension. Meanwhile, the most of the customers are highly satisfied with the service quality of new private sector banks.

Table-2: Mean and Standard Deviation of Service Quality and Overall Satisfaction of Customers

| Particulars | Mean | S.D. | Reliability-Cronbach's Alpha |
|-------------------------------|------|------|------------------------------|
| Tangibles | 3.74 | 0.85 | 0.86 |
| Responsiveness | 3.82 | 0.84 | 0.83 |
| Reliability | 3.80 | 0.78 | 0.85 |
| Assurance | 3.72 | 0.82 | 0.81 |
| Empathy | 3.68 | 0.72 | 0.84 |
| Overall Customer Satisfaction | 4.78 | 0.74 | 0.78 |

Using Cronbach's coefficient, internal consistency for service quality dimensions and overall customer satisfaction was estimated 0.86 for tangibles dimension, 0.83 for responsiveness dimension, 0.85 for reliability dimension, 0.81 for assurance dimension, 0.84 for empathy dimensions and 0.78 for overall customer satisfaction. Usually a reliability coefficient above 0.70 is considered sufficient for exploratory studies (Nunnally, 1967). The reliability values are all above 0.80. Thus, it can be concluded that the measures used in the present study are valid and reliable.

Relationship between Service Quality Dimensions and Customer Satisfaction

The relationship between service quality dimensions and customer satisfaction was analyzed by computing correlation coefficient and the results are presented in **Table-3**. The correlation analysis shows that the service quality dimensions are positively and moderately associated with overall customer satisfaction.

Table-3: Relationship between Service Quality Dimensions and Customer Satisfaction

| | Tangibles | Responsiveness | Reliability | Assurance | Empathy | Customer Satisfaction |
|-----------------------|-----------|----------------|-------------|-----------|---------|-----------------------|
| Tangibles | 1.00 | - | - | - | - | - |
| Responsiveness | 0.52** | 1.00 | - | - | - | - |
| Reliability | 0.68** | 0.53** | 1.00 | - | - | - |
| Assurance | 0.59** | 0.47** | 0.43** | 1.00 | - | - |
| Empathy | 0.62** | 0.42** | 0.57** | 0.55** | 1.00 | - |
| Customer Satisfaction | 0.58** | 0.66** | 0.63** | 0.61** | 0.42** | 1.00 |

Note: ** indicate significant at one percent level.

The results further reveal that there is a significant and positive relationship between five dimensions of service quality and customer satisfaction, the highest correlation is between responsiveness and customer satisfaction ($r = 0.66$; $p < 0.01$) followed by between reliability and customer satisfaction ($r = 0.63$; $p < 0.01$) between assurance and customer satisfaction ($r = 0.61$; $p < 0.01$) and between tangibles and customer satisfaction ($r = 0.58$; $p < 0.01$). The weakest association is between empathy and customer satisfaction ($r = 0.42$; $p < 0.01$). The results indicate that the most important service quality practice on customer satisfaction is responsiveness (i.e., with the highest value of correlation co-efficient) which proves that responsiveness is perceived as a dominant service quality. Thus, the null hypotheses of this study are supported.

Influence of Service Quality Dimensions on Overall Customer Satisfaction

The influence of service quality dimensions on overall customer satisfaction was analyzed by employing multiple regression and the results are presented in **Table-4**. The results indicate that the coefficient of multiple determinations (R^2) is 0.66 and adjusted R^2 is 0.63 indicating the regression model is reasonably fit. It is inferred that about 63.00 per cent of the variation in dependent variable (Overall Customer Satisfaction) is explained by the independent variables (Service Quality Dimensions).

Table-4: Influence of Service Quality Dimensions on Overall Customer Satisfaction

| Variable | Regression Co-efficient (Beta) | t-value | Sig |
|----------------|--------------------------------|---------|------|
| Constant | -0.219** | 4.428 | 0.00 |
| Tangibles | 0.106** | 3.224 | 0.01 |
| Responsiveness | 0.164** | 3.862 | 0.00 |
| Reliability | 0.145** | 3.546 | 0.00 |
| Assurance | 0.132** | 3.310 | 0.01 |
| Empathy | -0.098** | 2.982 | 0.01 |
| R^2 | 0.658 | - | - |
| Adjusted R^2 | 0.634 | - | - |
| F | 27.621 | - | 0.00 |
| N | 400 | - | - |

Note: ** indicate significant at one percent level.

The proposed model is adequate as the F-statistic = 27.621 and it is significant at one per cent level ($p < 0.01$). This indicates that there is a statistically significant association between service quality dimensions and overall customer satisfaction. The results show that the service quality dimensions of tangibles, responsiveness, reliability and assurance are positively and significantly influencing the customers overall satisfaction, while the empathy is negatively and significantly influencing the customers overall satisfaction at one per cent level in

new private sector banks. Thus, it indicates that there is a statistically significant link between service quality dimensions and overall customer satisfaction.

CONCLUSION

It is often said that retaining existing customers in any business is not very expensive than attracting a new one and banking sector is no exception to this principle. In a competitive market, the cost of acquiring new customer is high as compared to that of retaining the existing ones. A bank, be it in private sector or in public sector, cannot continue to exist in the long run if its customers are dissatisfied for a reasonable period of time. Private sector banks operating in India, that are relatively new entrants in any market and particularly in small towns, are expected not only to invent new products and services on a continuous basis after understanding the requirements of their existing and potential customers but to provide better quality of services as well in order to effectively satisfy their customers in a competitive environment. Although the present study reveals significant and positive correlation between all the selected dimensions of service quality on satisfaction of customers of private sector banks operating in Panipat District of Haryana, bank management at branch level are expected to consider sincerely about tangibility dimension of service quality for ensuring higher degree of satisfaction of customers since the scope for improving tangibility dimension of service quality is yet to be explored to a large extent.

The research model proposed in the study postulates that service quality dimensions influence on overall customer satisfaction directly. The model also postulates that service quality has a positive relationship with overall customer satisfaction and tested them through Correlation Analysis and Multiple Regression to find their significance in the hypotheses.

The results shows that the most important service quality practice on customer satisfaction is responsiveness as it is perceived as a dominant service quality. The results reveal that the service quality dimensions of tangibles, responsiveness, reliability and assurance are positively and significantly influencing the customers overall satisfaction, while the empathy is negatively and significantly influencing the customers overall satisfaction. Thus, this present research concluded that service quality is the basic and also most important factor that influences the overall customer satisfaction. This finding reinforces the need for banks managers to place an emphasis on the underlying dimensions of service quality especially on responsiveness and should start with improving service quality in order to raise overall customer satisfaction.

Further, this study is consistent with those of prior research in concluding that: service quality is a significant influence of overall customer satisfaction, and service quality dimensions are the basic factors that affect overall customer satisfaction. It is apparent that focusing on delivering high quality services and improve service quality effectively is critical for customer satisfaction. In addition, the satisfaction of customers was significantly influenced by the (Tangibles, Responsiveness, Reliability and assurance). It is thus apparent that managers of new private sector banks could make assessing and monitoring service quality in banks periodically, to enable the banks to identify where improvements are needed from the customers' viewpoint and to place an emphasis on the underlying dimensions of service quality, especially on responsiveness and should start with improving service quality in order to raise overall customer satisfaction.

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