MSNIM MANEL SRINIVAS NAYAK INSTITUTE *of* MANAGEMENT

MSNIM Besant Campus, Bondel, Mangaluru – 575 008, D.K. District, Karnataka State, India
(Affiliated to Mangalore University, Approved by AICTE)
(Sponsored by: Women's National Education Society)

Criterion 3 – Research, Innovations and Extensions (110)

Key Indicator 3.3 – Research Publication and Awards (25)

3.3.1. Number of research papers published per teacher in the Journals as notified on UGC CARE list during the last five years (10)

MANEL SRINIVAS NAYAK INSTITUTE OF MANAGEMENT

WOMEN'S NATIONAL EDUCATION SOCIETY

MSNIM, Bondel Campus, Mangalore – 575 008

Ph: 8951303111

Website: www.msnim.edu.in

Demographic and Household Factors' influence on Life Insurance Lapsation

K VIDYAVATHI

Sr. Faculty, Srinivas University Campus, iNurture Education Solutions Pvt Ltd, Bangalore, India
vidyavathijayakumar@gmail.com

Sharan Kumar SHETTY
Manel Srinivas Nayak Institute of Management, Mangaluru, India
sharansai25@gmail.com

Cristi SPULBAR
Department of Finance, Banking and Economic Analysis,
Faculty of Economics and Business Administration, University of Craiova, Craiova, Romania
cristi_spulbar@yahoo.com

Ramona BIRAU
Faculty of Economic Science, University Constantin Brancusi, Tg-Jiu, Romania
ramona.f.birau@gmail.com

Abstract

In this study, we examined the influence of demographic and household factors on a decision to lapse a life insurance policy in India. Lapses in life insurance have been an interesting area of research in academics in developed countries where there exist matured insurance markets. Whereas in India very few empirical studies have been done on the lapsation of life insurance policies. This is the first research to study the influence of demographic and household factors on lapse behaviour in the Indian life insurance market using survey data. A survey of randomly selected 537 policy holders was conducted during the period from July to December 2021. Face-to-face interview of sample respondents using structured questionnaire was done to explore what are the demographics and household factors having influence over the decision to lapse a life insurance policy. We found that age, marital status and occupation have influence over the decision to lapse a life insurance policy. This finding of our study supports and provides a new perspective to the emergency fund hypothesis.

Keywords: Life insurance; Lapse; Persistency; Surrender value; Maturity; Chi-square; Logit model; customer; emerging economies, social sustainability

Introduction

In this study, we examined the influence of demographic and household factors on a decision to lapse a life insurance policy in India. Lapses in life insurance have been an interesting area of research in academics in developed countries where there exist matured insurance markets. Whereas in India very few empirical studies have been done on the lapsation of life insurance policies. This is the first research to study the influence of demographic and household factors on lapse behaviour in the Indian life insurance market using survey data.

The background of this paper is that the Insurance Regulatory and Development Authority of India (IRDAI) in its Handbook on Indian Insurance Statistics 2020-21 has given lapse ratio and persistency figures for life insurers from 2013-14 to 2020-21. Lapse ratio in many of the life insurance companies is not looking good.

Over the last two decades i.e. in the post-reform period, not only the number of insurance players have increased but also a lot of positive changes have happened in the products, method of payment, delivery of service, distribution channel etc. Also, there is a world-class regulatory system to supervise and promote the development of the insurance business in India. In insurance, penetration and density are often used to measure the development of insurance sector in a country. Penetration is the percentage of insurance premium to GDP while density is the ratio of premium to population or per capita premium. In India, insurance penetration has increased from 2.71 per cent in 2001-02 to the highest of 5.20 per cent in 2009-10. Since then, level of insurance penetration declined till 2014-15, and it started increasing again from 2015-16 and it was 4.20% in 2020-21. Insurance density has increased consistently from USD 11.5 in 2001-02 to USD 64.4 in the year 2010-11. After some ups and downs it started increasing again from 2016-17 and in 2019-20 and 2020-21 it remained same at the level of USD 78. As per Swiss Re, in life insurance, India is ranked 10th in the world. Life insurance premium in India has increased by 6 per cent (inflation-adjusted) when global insurance premium has reduced by by3.1 per cent as per the Swiss Re Report (2021). Despite all these improvements, lapse ratio is better only for some insurers and for 7 out of 24 insurers it is still in the double digits in 2019-20, however this number has reduced to five in 2020-21. But for 12 out of 24 insurers lapse ration is higher than 5%. Persistency ratio of the life insurance industry, on average, has shown a negligible improvement from 68.68 per cent in the 13th month in 2017-18 to 69.01 in the 13th month in 2020-21. Persistency of 69 per cent in the 13th month means one year after the sale only 69 out of every 100 policies were renewed. In other words persistency measures how, long customers persist with their policies.

The handbook has also provided the persistency ratios for 25th, 37th, 48th and 61st months. For the financial year 2020-21, the life insurance industry, on average, had persistency of only 41 per cent in the 61st month. By the 5th year of policy sale, 14 out of 24 life insurers had persistency ratio below this average and four out of 24 life insurers could not retain a half of their policies. Higher lapses or lower persistency is a worrisome situation when we compare with a global average of persistency, which is close to 90 per cent in the 13th month and above 65 per cent after 5 years.

A life insurance policy is said to be lapsed when the policy owner discontinues the payment of premium falls due before the policy attains the surrender value or maturity benefit for any reason other than the death of policy owner. When there is neither a surrender benefit nor a maturity benefit lapsation of a policy will result in the loss of premium already paid as well as the benefit of life coverage. Life insurance policies are long term contracts and customers would get the benefit only if they continue to pay the premium for the entire term of the policy. Huge early lapses or a lower persistency will also pose a threat to the financial health of insurance companies.

Literature review

Lapsation in the insurance industry and in the insurance market is a very important phenomenon (Fang & Kung, 2012). Lapsation of an insurance policy is considered to be the most critical problem being faced by any insurance company in India (Suresh & Ramesh, 2011). The lapsation has significantly indirect relation with the performance of the policy (James & Randy, 1998).

The Kannan et al. (2008) in their research study on insurance lapsation in Indian insurance industry found that age at the entry to the policy, premium mode being used to service the policy, type of the policy are the main factors which influence the lapsation. The same research also suggested that the measures like campaigns and incentives to policyholders and intermediaries might prove useful in curbing lapse rate.

The study conducted by Stephen & Andre (2012) about the impact of household factors on lapse conclude that households which have experienced income shock are more likely to lapse in comparison to others. In the same study, it is stated that lapse is more by younger policyholders than by older ones. The purchase of the new policy will also have a significant and positive relationship with the lapsation of earlier policies. Financial hardships being faced by the policyholders also have a direct relation to the lapsation of policy (Stephen & Andre, 1998).

A research paper by Adjmal S. Sirak (2015) proved that controlling for age, income and wealth of policyholders have no effect on lapse rate. However, this study has also proved that unemployment has a role to play in policy lapsation. The findings of this paper contradict the findings of the study done by Kuo, Tsai and Chen (2003) which proposed that unemployment has no role in lapsation. Research by Fang and Kung (2012) links policy surrender with the age or gender of the policyholder. Nolte & Schneider (2015) included family information, education, finances and health of the policyholder in their study. According to their research, financial literacy tends to decrease the surrender of policy; hence the literacy level of the insured has a role in the lapsation of the policies. Even the income shocks of insured are also a factor in influencing the lapsation of life insurance policies. Further lapse is severe among policyholders who are in the higher age bracket (Fang & Kung, 2012).

Gemmo and Martin (2016) in their working paper demonstrated that demographic variables like Age, Marital Status, Birth of a child, number of children, acquisition of assets, employment, income have got their influence on the surrender of a life insurance policy. Age has greater influence on surrender of policy. According to them, old people tend to surrender their policies more often than the younger ones. This study also states that any situation leading to the acquisition of assets may cause surrender of policy. In the same paper the authors have concluded that shock in household income can also be a reason for surrendering a life insurance policy.

Objectives

Life insurance policy lapses are tested using macroeconomic data in most of the literature. Macroeconomic data analysis provides an insight into the general determinants of lapsation of life insurance policies. Very limited literature is available on analysis of microeconomic and household data that lead to a lapsation of a life insurance policy. Hence the purpose of this research paper is to analyze whether the demographic and household factors influence the decision to discontinue a life insurance policy before it attains a surrender value.

Data and Methodology

In India the secondary data resources which can be used to analyze the lapse determinants are very limited unlike in developed countries. Publicly available data regarding lapse available with IRDA are limited to lapse ratio and persistency ratio of insurance companies. Insurance companies do not share any kind information about the policyholders who have lapsed or surrendered their policy. Hence the data and information required for this research are collected from people who own life insurance policies and an enquiry has been done whether

they have lapsed or surrendered their policy before maturity and the factors driving for such behaviour.

During the survey respondents were randomly selected and data and information were gathered through face to face interview using a structured questionnaire. We approached more than 1000 people but could collect required data from only 537 people who owned life insurance policies after 2001. Of which, 128 policyholders lapsed their policies before they attained the surrender value and 135 policyholders surrendered their policies before maturity. During the survey demographic and household data were collected from the people who lapsed their policies as well from those who continued their policies. The collected data were analyzed using SPSS and Gretl. Cross tabulation and Pearson's Chi-square were used to examine the association between demographic and household factors and decision to lapse a life insurance policy. A logit model was developed using Gretl to test the marginal effect of demographic and household factors having an association with the decision to lapse a life insurance policy.

Results and Discussion

The objective of this research is to find out whether demographic and household factors drive a decision to lapse a life insurance policy before it attains a surrender value. The findings of the study are presented below. Sample for this study consisted of 537 respondents who owned life insurance policies. In order to determine whether the policy has lapsed, surrendered or continuing, we mainly focused on the following two questions in the survey.

Question 1: Have you ever discontinued any of your policies (lapsed) before the policy attaining the surrender value?

Question 2: Have you ever surrendered any of your policies before the policy attaining maturity?

Respondents who answered in affirmative to the first question were classified as having lapsed policy and were asked several additional questions to probe into the reasons to lapse a policy. Respondents who answered in affirmative to the second question were classified as having surrendered a policy and were asked several additional questions to probe into the reasons to surrender a policy. Respondents who answered in negative to both the questions were classified as having a continued policy and were asked several additional questions to probe into the factors that could produce better persistency. Table 1 exhibits the classification of a total of 537 respondents into the number of male/female respondents who have lapsed, surrendered and continuing their life insurance policies.

Table 1. Status of policy owned by the sample respondents

Policy holders	Status of the life insurance policy			
	Lapsed	Surrendered	Continuing	Total
Male	73(57%)	82(61%)	182(66%)	337(63%)
Female	55(43%)	53(39%)	92(34%)	200(37%)
Total	128(100%)	135(100%)	274(100%)	537(100%)

Source: Field Survey

Demographic Profile of Respondents

Table 2 exhibits the demographic profile of our sample respondents, and the results cross-tabulation and Pearson's Chi-square test for lapse and demographic and household variables. For this study 537 respondents were surveyed, of which, 63 per cent (337) are males and 37 per cent (200) are females. 396 respondents (72.8%) were married and 141 respondents were unmarried. When we look at the age of the respondents, 170 respondents (31.7%) are in the

age group of 20-30, 118 are in the age group of 31-40 (22%), 138 are in the age category of 41-50 (25.7%) and 111 are above 51 years of age (20.6%).

Information about the educational qualification of respondents was collected. 87 respondents had educational qualification of SSLC or below, 111 respondents had educational qualification of intermediate, 122 were graduates and 177 were postgraduates. We also looked at the occupation of our respondents. Maximum of 208 respondents were the employees of either the public or private sector with a guaranteed regular income. 147 respondents' income came from business, and 43 respondents drew their income from agriculture. 87 housewives and 52 students who owned life insurance policies had no income of their own and their policies were serviced by their husbands and parents.

This study also collected information about the size of the family and the number of dependents of sample policyholders. There were 226 sample policyholders with a family of 4 members, the family size of 135 sample respondents was less than 4 members and 176 respondents had a family with more than 4 members. Of the 537 respondents, 147 respondents had no dependents, 192 respondents had 1-2 dependents and 198 respondents had 3 and more dependents.

Table 2. Pearson's Chi-Square test for Lapse and demographic and household variables

Demographic variables		Frequency	Have you ever discontinued any of your policies before the policy attaining the surrender value? Cross tabulation				H_0 Rejected at $\alpha =0.05$
			Yes	No	Chi-square	p-value	
Gender	Male	337 (62.8)	73 (57%)	264 (64.5%)	2.357	0.125	No
	Female	200 (37.2)	55 (43%)	145 (35.5%)			
Age category	20-30	170 (31.7)	23 (18%)	147 (35.9%)	19.209	0.000	Yes
	31-40	118 (22.0)	29 (22.7%)	89 (21.8%)			
	41-50	138 (25.7)	48 (37.5%)	90 (22%)			
	51 & above	111 (20.6)	28 (21.9%)	83 (20.3%)			
Qualification	SSLC	87 (16.2)	27 (21.1%)	60 (14.7%)			
	Intermediate	111 (20.7)	31 (24.2%)	80 (19.6%)	5.739	0.125	No
	Graduation	222 (41.3)	48 (37.5%)	174 (42.5%)			
	Post-graduation	117 (21.8)	22 (17.2%)	95 (23.2%)			
Marital Status	Unmarried	141 (26.3)	21 (16.4%)	120 (29.3%)	8.422	0.004	Yes
	Married	396 (73.7)	107 (83.6%)	289 (70.7%)			
Occupation	Agriculture	36 (6.7)	6 (4.7%)	30 (7.3%)			
	Business	147 (27.4)	38 (29.7%)	109 (26.7%)			
	Employees of public sector	71 (13.2)	13 (10.2%)	58 (14.2%)	23.093	0.000	Yes
	Employees of private sector	144 (26.8)	32 (25.0%)	112 (27.4%)			

	Housewife	87 (16.2)	35 (27.3%)	52 (12.7%)			
	Student	52 (9.7)	4 (3.1%)	48 (11.7%)			
Size of the family	Less than 4	135 (25.1)	36 (28.1%)	99 (24.2%)	2.347	0.309	No
	4	226 (42.1)	57 (44.5%)	169 (41.3%)			
	greater than 4	176 (32.8)	35 (27.3%)	141 (34.5%)			
No. of dependents	Zero dependents	147 (27.4)	29 (22.7%)	118 (28.9%)			
	1-2 dependents	192 (35.7)	56 (43.6%)	136 (33.3%)	4.861	0.088	No
	3 and more dependents	198 (36.9)	43 (33.6%)	155 (37.9%)			

Source: Field Survey

Pearson's Chi-Square Statistics

Whether a decision to lapse an insurance policy is independent of demographic and other related factors are tested using Pearson's Chi-Square statistics. Pearson's Chi-Square test follows an asymptotic chi-square distribution with (R-1)(C-1) when the row and column variables are independent. Table 2 gives the analysis of cross-tabulation and the results of Pearson's Chi-Square statistics for the lapse and demographic and other related variables.

Pearson's Chi-Square test is used to examine the association between decision to lapse an insurance policy and the gender of a policy owner. Hence,

H_0: Gender and decision to lapse an insurance policy are independent

H_1: Gender and decision to lapse an insurance policy are associated (not independent)

The Chi-Square test result indicates that for our survey data with Chi-Square value of 2.357, there is no association between a person's gender and decision to lapse a life insurance policy (p-value = 0.125)

Pearson's Chi-Square test is used to examine the association between decision to lapse an insurance policy and the age of a policy owner. Hence,

H_0: Age category and decision to lapse an insurance policy are independent

H_1: Age category and decision to lapse an insurance policy are associated (not independent)

The Chi-Square test result indicates that for our survey data with Chi-Square value 19.209 there is an association between a person's age and decision to lapse a life insurance policy (p-value = 0.000)

Pearson's Chi-Square test is used to examine the association between decision to lapse an insurance policy and the qualification of a policy owner. Hence,

H_0: Qualification and decision to lapse an insurance policy are independent

H_1: Qualification and decision to lapse an insurance policy are associated (not independent)

The Chi-Square test result indicates that for our survey data with the Chi-Square value 5.739 there is no association between a person's qualification and decision to lapse a life insurance policy (p-value = 0.125)

Pearson's Chi-Square test is used to examine the association between decision to lapse an insurance policy and the occupation of a policy owner. Hence,

H_0: occupation and decision to lapse an insurance policy are independent

H_1: occupation and decision to lapse an insurance policy are associated (not independent)

The Chi-Square test result indicates that for our survey data with the Chi-Square value 23.093 there is an association between a person's occupation and the decision to lapse a life insurance policy (p-value =0.000)

Pearson's Chi-Square test is used to examine the association between decision to lapse an insurance policy and the marital status of a policy owner. Hence,

H_0: Marital status and decision to lapse an insurance policy are independent

H_1: Marital status and decision to lapse an insurance policy are associated (not independent)

The Chi-Square test result indicates that for our survey data with the Chi-Square value 8.422 there is an association between a person's marital status and decision to lapse a life insurance policy (p-value =0.004)

Pearson's Chi-Square test is used to examine the association between decision to lapse an insurance policy and the family size of a policy owner. Hence,

H_0: Family size and decision to lapse an insurance policy are independent

H_1: Family size and decision to lapse an insurance policy are associated (not independent)

The Chi-Square test result indicates that for our survey data with the Chi-Square value 2.347 there is no association between a person's family size and decision to lapse a life insurance policy (p-value = 0.309)

Pearson's Chi-Square test is used to examine the association between decision to lapse an insurance policy and the number of dependents of a policy owner. Hence,

H_0: number of dependents and decision to lapse an insurance policy are independent

H_1: number of dependents and decision to lapse an insurance policy are associated (not independent).

The Chi-Square test result indicates that for our survey data with the Chi-Square value 4.861 there is no association between the number of dependents and decision to lapse a life insurance policy (p-value =0.088)

Logit Model

Pearson's Chi-Square statistics displayed in Table 2 indicates that there is an association between age, marital status and occupation of respondents and decision to lapse a life insurance policy as p-value in these three cases are less than the significance value of 5 per cent. Hence the decision to lapse a life insurance policy is influenced by these three variables. So age, marital status and occupation were selected for logistic regression analysis.

The lapse of life insurance policy (0 = not lapsed and 1 = lapsed) was the dependent variable. Age, marital status and occupation are independent variables which are also categorical and dichotomous. When both dependent and independent variables are dichotomous logit model is used. The three independent variables namely age group, marital status and occupation group are included in the model. Cross tabulation results given in table 2 indicate that among the policyholders who have lapsed their policies, people falling in the age group of 41-50 are the highest. So, we have assigned 0 for all the respondents falling in the age group other than 41-50 and 1 for the respondents falling in the age group of 41-50. Policyholders who are married are the highest to lapse among those who have lapsed their policies. So, we have assigned 0 for the respondents who are unmarried and 1 for married. Similarly, from the cross-tabulation result, it is clear that among the policyholders who have lapsed their policies respondents with their occupation as a business are the highest. So, we have assigned 0 for all the respondents falling in the occupation category other than business and 1 for the respondents falling in the occupation category of business.

Logit model is constructed in Gretl employing maximum likelihood method and the probability of lapsation of a policy by the policy owner is estimated on the basis of age, marital status and occupation of the policy owner.

Logit model is estimated as follows:

$$Lapse = \beta_0 + \beta_1 Agegroup_i + \beta_2 Maritalstatus_i + \beta_3 Occupationgroup_i + \mu_i$$

Where lapse is equal to one if individual i has lapsed the policy, zero otherwise, marital status is equal to one if the individual i has lapsed the policy with the marital status as married, zero otherwise, Age group is equal to one if the individual i has lapsed the policy falling in the age group of 41-50, zero otherwise, occupation is equal to one if individual i has lapsed the policy is having business as his/her occupation, zero otherwise.

Logit model is defined as

$$LN\ (P_i/1-P_i) = \beta_0+\beta_1 X_i+\beta_2\ X_i+\beta_3\ X_i+\mu_i \qquad (1)$$

Our model is estimated as

$$LN\ (Lapse/No\ Lapse) =\beta_0+\beta_1 Agegroup_i+\beta_2 Maritalstatus_i+\beta_3 Occupationgroup_i+\mu_i\ (2)$$

Model 1: Logit, using observations 1-537
Dependent variable: Lapse
Standard errors based on Hessian

	Coefficient	Std. Error	z	p-value	
Constant	−1.80822	0.241285	−7.494	<0.0001	***
AgeGroup	0.626137	0.225224	2.78	0.0054	***
MaritalStatus	0.570751	0.273345	2.088	0.0368	**
Occupationgroup	0.070697	0.228829	0.309	0.7574	

Mean dependent var	0.238361	S.D. dependent var	0.426478
McFadden R-squared	0.028262	Adjusted R-squared	0.014699
Log-likelihood	−286.5767	Akaike criterion	581.1534
Schwarz criterion	598.2974	Hannan-Quinn	587.86

Number of cases 'correctly predicted' = 409 (76.2%)
F (beta'x) at mean of independent vars = 0.426
Likelihood ratio test: Chi-square (3) = 16.6698 [0.0008]
Predicted
              0   1
Actual   0   409   0
         1   128   0
Excluding constant, p- value was highest for variable 4 (occupation)

Logit estimates of equation (2) are obtained using Gretl. Following is the Logit equation of our lapse model. Figures in parentheses are standard errors based on Hessian

Lapse = - 1.80822+ 0.626137Agegroup + 0.570751 Marital status + 0.0706970 Occupation
        (0.241285)   (0.225224)   (0.273345)   (0.228829)

From the model, it is clear that the effect of age group and marital status is statistically significant. However, the coefficients in the output are not interpreted as marginal effects. To obtain marginal effect we need to re-estimate the model by selecting the option "shows the slopes at mean" and we get Logit model 2. The marginal effect of age group is 0.119. A policyholder falling in the age group of 41-50, will increase the probability of lapsing the policy by 12 per cent. Policyholders at this age, generally, have financial commitments towards children's higher education/or marriage etc.,

Further, it is at this age, generally, people plan for realizing their dream of owning a house. So, policyholders, at this age often face financial hardships and use the funds for personal projects that would otherwise go to the premium payment. Hence, the liquidity needs for personal projects force policyholders to lapse life insurance policies. The marginal effect of marital status is 0.093. A policyholder having the marital status of 'married' will increase the probability of lapsing the policy by 10 per cent. Marriage in India is an expensive affair and having married/marital status brings with it several responsibilities and financial conditions change.

Women after marriage in India generally move to husbands' house and their financial conditions change. Quite often it takes time to find a new job in the new region and makes these women after marriage financially vulnerable which forces them to lapse their life insurance policies. Similarly, the marginal effect of occupation is 0.01. A policyholder having business as his/her occupation will increase the probability of lapsing policy by one per cent. Compared to public/private sector employment, business as an occupation has an irregular flow of income. Policyholders with small businesses whenever faced with debt and other types of financial hardships let go of their policies to lapse. Overall, the model gives 76 per cent correct prediction.

Model 2: Logit, using observations 1-537
Dependent variable: Lapse
Standard errors based on Hessian

	Coefficient	Std. Error	Z	Slope[*]
Const	−1.80822	0.241285	−7.494	
AgeGroup	0.626137	0.225224	2.78	0.119655
Marital Status	0.570751	0.273345	2.088	0.0937334
Occupation	0.070697	0.228829	0.309	0.0126367

Mean dependent var	0.238361	S.D. dependent var	0.426478
McFadden R-squared	0.028262	Adjusted R-squared	0.014699
Log-likelihood	−286.5767	Akaike criterion	581.1534
Schwarz criterion	598.2974	Hannan-Quinn	587.86

[*]Evaluated at the mean
Number of cases 'correctly predicted' = 409 (76.2%)
F(beta'x) at mean of independent vars = 0.426
Likelihood ratio test: Chi-square (3) = 16.6698 [0.0008]

Predicted
0   1
Actual   0   409   0
1   128   0
Excluding constant, p- value was highest for variable 4 (occupation)

Conclusions

Life insurance policy lapses may prove fatal to the profitability, liquidity and solvency of companies. Lapsation and surrender activity represents an erosion of the customer base, which is likely to lead to an increased fixed administrative cost per policy and require substantial marketing expenditures to rebuild (David T. Russell and others 2013). Belth (1975) and Carson and Dumm (1999) found that high levels of lapsation, *ceteris paribus* resulted in a significantly higher cost for life insurance.

Majority of available studies on lapsation have used macro-economic data for testing lapse determinants and very few studies have used microeconomic factors which include household-specific and life cycle factors like family size, number of earning members, education, employment status, marital status, debt status, income/wealth shocks etc. that drive the lapse decision.

Results of our study suggest that demographic and household factors influence the decision to lapse a life insurance policy. Age and marital status are statistically significant predictors of decision to lapse a policy. The findings of our study are in support of the Emergency Fund Hypothesis - one of the principal hypotheses about lapse behaviour which has been discussed and proved in most of the existing literature. Emergency Fund Hypothesis states that policyholders consider their life insurance policies as a source of emergency funding in times of financial need. In addition to this, the shortage of money and liquidity needs for personal projects force the policyholders to lapse their life insurance policies as a last resort (Linton 1932; Outreville 1990; Kuo et al 2003; Kim 2005a).

The findings of this research have two major implications. Firstly, the insurers have to monitor lapse behaviour to prevent financial losses and attract more and more new businesses. Lapse behaviour of policyholders not only affects financial performance/solvency but also many other activities like product design, product pricing, asset-liability management, risk management etc. With the ICT revolution information about financial products and financial markets are easily and quickly available to investors. Thus, insurance companies/ intermediaries must map the insurance product features with the needs of customers and pay attention to market the need-based products.

Secondly, policyholders' personal plans (e.g. purchase/construction of the house, children's education/marriage) are very difficult to anticipate for the insurance companies, but they remain the most significant drivers of lapsation and hence due consideration be given to household-specific and life cycle factors while designing life insurance products.

References

[1] Alpesh Shah, Pranay Mehrotra &Ruchin Goyal (2011) "India Insurance, Turning 10, Going on 20". Available at www.bcg.com

[2] Arpita Khare, Saumya Dixit, Ruchi Chaudhary, Priyanka Kochhar & Shruti Mishra (2012): "Customer Behavior toward Online Insurance Services in India" Journal of Database Marketing & Customer Strategy Management. Available at http://search.proquest.com

[3] Belth, JM (1975): "The Impact of Lapse Rates on Life Insurance Prices", Journal of Risk and Insurance, 42: 17-34. available at http://search.proquest.com

[4] Bhattacharya, Arjun & Rane, O'Neil. (2003)," Nationalisation of insurance in India" Centre for Civil Society, Working Paper, available at www.ccs.in/nterns2003/chap32

[5] Carson, James M and Dumm, Randy E (1999): "Insurance Company-level Determinants of Life Insurance Product Performance", Journal of Insurance Regulation: Winter 1999. available at http://search.proquest.com

[6] Dasgupta Saibal (1999): "India: Insurers Wait in the Wings" Best's Review, November, available at http://search.proquest.com

[7] David T.Russell, Stephen G. Fier, James M. Carson and Randy E. Dumm (2013): "An Empirical Analysis of Life Insurance Policy Surrender Activity", Journal of Insurance Issues, 2013, 36(1): 35-37. available at http://search.proquest.com

[8] Deepti Bhaskaran (2012): "Should Policies That Die Worry You?" Hindustan Times, 27.7.2012 Mumbai Edition.

[9] Deloitte (2011) "Indian Insurance Sector, Innovate Now Or Stagnate" available at www.deloitte.com/in

[10] Dieter Kiesenbauer (2011): "Main Determinants of Lapse in the German Life Insurance Industry", available at http://search.proquest.com

[11] G. Prabhakara (2010), "*The Evolution of Life Insurance Industry in the last decade (2000 – 2010)*" The Journal of Insurance Institute of India , Vol 36(2) July-December 2010

[12] Gatzert, N., (2009): "Implicit Options in Life Insurance: An Overview", available at http://search.proquest.com

[13] Government of India "Economic Survey" from 2000-01 to 2015-16

[14] Hanming Fang and Edward Kung (2012): "Why Do Life Insurance Policyholders Lapse? The Roles of Income, Health and Bequest Motive Shocks", available at http://search.proquest.com

[15] Haridas R (2011): "*Life Insurance in India*" New Century Publications, New Delhi, India.

[16] Harpreet Singh Bedi and Preeti Singh (2011) "An Empirical Analysis Of Life Insurance Industry In India" International Journal of Multidisciplinary Research Vol.1 (7), November 2011.

[17] IRDAI Annual Reports from 2000-01 to 2017-18

[18] IRDAI Handbook on Indian Insurance Statistics 2017-18

[19] Kannan R., Sarma K.P., Rao A.V and Sarma S.K. (2008) "Lapsation and its impact on Indian Life Insurance Industry (2002-07) Occasional Paper: 1/2008, Insurance Regulatory and Development Authority (IRDA) November 2008

[20] Kim, C. 2005a. Modeling surrender and lapse rates with economic variables. North American Actuarial Journal 9 (4): 56–70.

[21] Kuo, W., Tsai, C., Chen, W.K., (2003): An Empirical Study on the Lapse Rate: The Cointegration Approach", Journal of Risk and Insurance 70(3), available at http://search.proquest.com

[22] Leafcraft insights (2013): "Outlook of Indian insurance industry" available at http://www.leafcraft.in/files

[23] Life Insurance Corporation of India (1991): "Tryst with Trust-The LIC Story", LIC of India

[24] LIMRA International (2009): "2009 Life Insurers Fact Book," available at http://search.proquest.com

[25] Linton, N.A. 1932. Panics and cash values. Transactions of the Actuarial Society of America 38: 365–394.

[26] Loi Soh Loi, Wu Yuan and Robert Lian Keng Heong (1993): "New Approach to Analysing Persistency of Insurance Policy", available at http://search.proquest.com

[27] Mauer Laurence and Holden Neil (2007) "Determinants of the Lapse Rate in Life Insurance Operating Companies" Review of Business; Fall 2007 available at http://search.proquest.com

[28] Mojekwu J.N (2011): "Study of Modes of Exit of Life-Insurance Policy Holders in Nigeria: Trends and Patterns", International Business Research Vol.4 No.3 July 2011 available at http://search.proquest.com

[29] Monika Halan, Renuka Sane and Susan Thomas (2013): "Estimating losses to customers on account of mis-selling life insurance policies in India" working paper, Indira Gandhi Institute of Development Research, Mumbai. Available at http://www.igidr.ac.in/pdf/publication.

[30] Narayanan H (2006): "Indian Insurance -A Profile" Jaico Publishing House, Mumbai

[31] Outreville, J.F. 1990. Whole-life insurance lapse rates and the emergency fund hypothesis. Insurance: Mathematics and Economics 9 (4): 249–255.

[32] Palande P.S, Shah R.S & Lunawat M.L. (2003): "Insurance in India: Changing Policies and Emerging Opportunities" Sage Publications, India.

[33] Purushotham Marianne (2006): "U.S. Individual Life Persistency Update", LIMRA's Market Facts Quarterly; Winter 2006 available at http://search.proquest.com

[34] Sachin S. Surana and Amar K. Gaur (2013): "Lapsation of Policy: A Threat or Curse for Life Insurance Industry", International Journal of Social Science and Interdisciplinary Research-IJSSIR, Vol 2(4) April 2013.

[35] Sadhak H (2009): "Life Insurance in India, Opportunities, Challenges and Strategic Perspective" Sage Publications, New Delhi.

[36] Santosh Anagol, Shawn Cole and Shayak Sarkar (2013) "Understanding the Advice of Commissions-Motivated Agents: Evidence from the Indian Life Insurance Market" Harvard Business School, Working Paper 12-055 March 7, 2013

[37] Sinha, Tapen (2005) "An Analysis of Evolution of Insurance in India", CRIS discussion paper, available at www.nottingham.ac.uk/business/cris/papers

[38] Skipper, H.D. (1998): "International Risks and Insurance: an Environmental-Managerial Approach" Irwin, McGraw-Hill

[39] Stephen G Fier and Andre P. Liebenberg (2012): "Life Insurance Lapse Behavior", available at http://search.proquest.com

[40] Subramanian N.V. (2004) " Lapsation of Life Insurance Policy- A Critical Study" The Journal of Insurance Institute of India, Vol. No. XXX July-December, 2004.

[41] Suresh Chandra CH and Jenda Ramesh 2011): "Lapsing of Policies in Life Insurance Sector-Need for Competitive Strategies", Journal of Banking Financial Services and Insurance Research, Vol 1 Issue 7 (October 2011)

[42] Tapen Sinha (2002): "Privatization of the Insurance Market in India: From the British Raj to Monopoly Raj to Swaraj" CRIS Discussion Paper Series-2002.X available at www.citeseerx.ist.psu.edu/viewdoc/download

[43] Vaughan, Emmett J. & Vaughan, Therese (2003): "Fundamentals of Risk and Insurance" Wiley India Publications, New Delhi, India.

[44] Vidyavathi (2013): "Lapsation of Life Insurance Policies in India" Zenith *International Journal of Business Economics and Management Research (ZIJBEMR)* Vol 3(2) November 2013.

[45] Vidyavathi (2014): "A Brief History of the Indian Life Insurance Industry" Zenith International Journal of Business Economics and Management Research (ZIJBEMR) Vol 4 (2) February 2014

[46] Vidyavathi (2015): "Indian Life Insurance in the Post Reform Period" *Global Journal for Research Analysis*" Vol.4 (9) September 2015

[47] Vidyavathi (2017): "Rise and fall of Ulips In Indian Life Insurance Market" *European Journal of Economics and Management* Vol 4(1) January-June 2017

[48] Vineet Kumar and Poonam Kumari (2012): "A Comparative Study On Public Vs Private Sector In Life Insurance In India" *VSRD International Journal of Business and Management Research, Vol. 2 (10) October 2012*

[49] Whitney Sally (1999): "Towards a Global Private Insurance Industry" Best's Review, March, available at http://search.proquest.com

[50] Adjmal S. Sirak (2015). Income and unemployment effects on life insurance lapse. Working Paper.

[51] Nolte, S. and Schneider, J. C. (2015). Don't lapse into temptation: A behavioral explanation for policy surrender.

[52] Hanming Fang and Edward Kung (2012), Why Do Life Insurance Policyholders Lapse? The Roles of Income, Health and Bequest Motive Shocks.

[53] Irina Gemmo, Martin Gotz (2016), Life Insurance and Demographic Change: An Empirical Analysis of Surrender Decisions Based on Panel Data, ICIR Working Paper Series No. 24/2016

[54] Carson, James M; Dumm, Randy E (1998), Insurance company-level determinants of life insurance product performance, Journal of Insurance Regulation; Winter 1999; 18, 2; ABI/INFORM Globalpg. 195

[55] Suresh Chandra CH and and Jenda Ramesh (2011) Lapsing of policies in life insurance sector-Need for competitive strategies & quot; Journal of Banking Financial services and insurance research, Vol 1 Issue 7 (October 2011)

[56] Stephen G. Fier and Andre P. Liebenberg (2012), Life Insurance Lapse Behavior.

Impact of Artificial Intelligence in Banking Sector with Reference to Private Banks in India

Sharan Kumar SHETTY
Manel Srinivas Nayak Institute of Management
sharansai25@gmail.com

Cristi SPULBAR
Faculty of Economics and Business Administration, University of Craiova, Craiova, Romania, cristi_spulbar@yahoo.com

Ramona BIRAU
Faculty of Economic Science, University Constantin Brancusi, Tg-Jiu, Romania
ramona.f.birau@gmail.com

Robert Dorin FILIP
University of Craiova, Doctoral School of Economic Sciences, Craiova, Romania
filiprobertdorin@gmail.com

Abstract

After the implementation of AI in Banks it is difficult to access some of them and at the starting stage people not ready to take risk. The study's data was gathered from primary and secondary sources of data. This study was done to know how the implementation of AI in banks impacted to the customer and to the bankers, is it really helps to the work or transaction or not. A variety of hypothesis were developed and evaluated in order to fulfil the goals of valuable suggestion that would benefit the customer for their easy transaction and to the banker to reduce burden of work. We gathered data for the study from both the primary and secondary aspects of data. The primary data collected from the customer is 170 and from the banker is 30 samples. As per customer point of view and banker's point of view total 200 primary data were collected for the study. From axis bank, ICICI bank, Karnataka bank, HDFC bank, etc. primary data collected as a banker point of view. For more information, secondary data were used that is from books, magazines, and from the websites. And chi square, correlation and regression statistical tools are used for the test.

Keywords: Artificial Intelligence; Mobile banking; Private Banks; Customers; emerging economy

INTRODUCTION

Artificial intelligence (AI) is the ability of a computer or a robot controlled by a computer to do tasks that normally require human intelligence and discernment. It is a simulation of human intelligence in machine that think and act like humans. Artificial Intelligence used in different industries like finance, health care, etc.

AI is also implemented in banking sector that is implemented to detect the fraud, solve the customer query, tracking customer behavior and recommending personalized service to them. Artificial intelligence (AI) is one technology that will alter the banking industry; banks are becoming more popular among customers. Traditional banks have begun to offer more online services as well. Artificial intelligence helps them automate procedures, make better judgments, and handle customer support requests with fewer resources. Also helps with risk management by detecting and combating fraud and money laundering in real time. Artificial intelligence can be applied in a variety of ways to improve the banking business. Banks can utilize AI to improve the customer experience by providing frictionless, 24/7 interactions; however, AI in banking apps isn't confined to retail banking. Investment banking's back and middle offices, as well as all other financial services, could benefit from AI. After India's independence, the government intended to nationalize the banks because all of the main banks were privately owned; this was a source of concern because people in rural areas still relied on money lenders for help. Reserve Bank of India was nationalized in 1949. Nationalization of the banking system improves the economy's overall health, creates more job opportunities, and boosts the country's rural and agricultural sectors.

Making internal operations efficient and the customer experience more effective has undoubtedly become a challenge following the demonetization average of Indian consumers becoming comfortable with internet banking. One of the major issues facing banks today is poor data quality and customer segmentation.

With the emergence of technology-oriented payments banks such as Airtel Payments Bank, Paytm Payments Bank, and others, as well as the arrival of neo banks and neo banking platforms, as well as the advent of NBFCs, banks are finding it increasingly difficult to survive in the old paradigm.

AI refers to a system that can see the world around it, analyze and interpret the data it gets, act on that understanding, and improve its performance by learning from its mistakes. And, by allowing robots to interact more naturally with their surroundings, people, and data, technology can expand both humans and machines' capacities well beyond what they can do on their own.

The banking industry has been transformed by artificial intelligence (AI). For greater development possibilities and to better serve new-age consumers, banks are actively implementing new-age technologies. AI is assisting banks in transforming their operations across the board, from accounting to sales to contracts and cybersecurity, Banks are future-proofing their offerings and services with data analytics, block chain, and machine learning.

AI in banking and finance is improving bank and financial company performance and competitiveness. Banks are applying AI to identify fraud, improve customer experience, track customer behavior to offer more tailored services, analyze client credit histories to anticipate risks associated with loan allocation, and many other purposes. Banks are implemented AI in some areas that are as follows: One of the key use cases of AI in the banking business is AI-based chatbot service. It is the modern way of providing service to the customers. AI chatbots in the banking business may serve consumers 24 hours a day, seven days a week and provide correct answers to their questions. These chatbots provide users a customized experience. As a result, AI chatbots for banking and financial operations enable banks to grab client attention, improve service quality, and grow their brand's market presence. Based on user search trends, intelligent mobile apps may monitor user behavior and extract insightful information. These data would aid service providers in making tailored suggestions to customers.

PROBLEM STATEMENT

There is a barter system in India, that time it is very difficult to transact and trade. After that paper notes came to picture and people use the paper currency for the transaction and that feels easy and convenience to transaction and that gives proper value as well.

In the case of banking transaction there need to visit bank and do the transaction. If there is any query then have to go to bank and solve, even the waste of time and errors are more. Implementation of AI reduce the time consuming and error in the transaction but negatively it increases the unemployment.

OBJECTIVE

1. To study the Artificial Intelligence in the banking sector and how it impacted to the customers.
2. To study the influence of AI in to the bankers.
3. To assess the challenges of bankers in the implementation of AI.
4. To examine the performance of banking sector post implementation of Artificial Intelligence.

LITERATURE REVIEW

Singh and Pathak (2020a) argued that an emerging country such as India is not very focused on digitalization so the distribution channels are very important in the context of the buying and selling process of investment for financial tools and assets. The research study also discussed about the the measures implemented by Reserve Bank of India (RBI) in the context of COVID-19 pandemic but also about Securities Exchange Board of India also known as SEBI and the volatility of stock prices.

Noreen et al. (2023) suggested that the banking industry can use suitable methods based on artificial intelligence in order to improve the quality of customer services as well as the banks' performance indicators. Karbassi Yazdi et al. (2022) argued that service industry is essential for a sustainable the economic development, especially because unlike traditional sectors the dependence on conventional resources is much reduced and it is open to the application of new and innovative business models. Birau et al. (2021) also suggested that the banking system is a vital mechanism in terms of reaching a sustainable level of development of the global economy.

Singh and Pathak (2020b) defined the concept of artificial intelligence such as "*the ability of machines to think on their own and do a task without the help of human beings*". The banking industry represents a data - intensive domain very compatible with artificial intelligence or machine intelligence and its such as the following: the field of machine learning (ML), Natural Language Processing also known as NLP, Deep Learning, interactive voice response (IVR), Speech Recognition or speech- to- text, image analysis and many others.

Mhlanga (2020) investigated the effect of Artificial Intelligence on the process of digital financial inclusion, while highlighting the importance of aspects such as: chatbots, fraud detection and cybersecurity in the context of improving the quality of services provided to bank customers.

Mehdiabadi et al. (2022) suggested that the concept of banking 5.0 is based on the architecture of an industrial revolution generated by artificial intelligence. Moreover, Samartha et al. (2022) examined the impact of mobile-banking applications and online transactions using "Unified theory of acceptance and use of technology" (UTAUT) modified model based on a case study for India which is an emerging country.

NEED FOR THE STUDY

Need for this study is whether the implementation of Artificial Intelligence in banking sector is positively impacted to the bank and the customer or to the clients. AI impacted positively, then how it actually effected to the bankers and to the customer for their transactions.
Chatbots is really solving the query of the customer immediately, it gives detail about the loan and what and all improvements are happened after the implementation of AI in banks. After the implementation of AI what and all problems happened to the customer and banks and what are the factor which really positively improved the banking transactions.

RESEARCH METHODOLOGY

Research approach was used to attain the project goal. To complete the project goal gathered information from the primary and secondary data. This is a descriptive study; it divided the large problem in to smaller one. More specific problems and stresses the discovery of fresh ideas and insights. Out of 138 crore population in India, in that divided private bank customer and the banker and based on that 200 sample collected for the study.

Sample means group of the population chosen for the study. Customers of Private Banks and the Bankers of Private Banking Sectors are included in the sample for the study.
Sample Size

Number of sample units are collected for the study is known as sample size. 170 respondents are taken from the customers of private banks. How the application of Artificial Intelligence in banks affected their banking transactions. 30 respondents are collected form the Bank employees.
Sampling Procedure

The Random sampling technique was adopted to select the respondents for the study purpose. Primary method was used to collect the data. There were two parts in the questionnaire Part A is Demographic details and Part B will be Conceptual questions.
Sample Design

Data presented with the help of pie charts, chi square, correlation and regression.

SOURCE OF DATA COLLECTION

Primary data secondary data were collected for this research. Questionnaires were used to collect primary data. There were both open ended and closed ended question used in the questionnaire. Separate questionnaires prepared for the customers and the bankers.
Journals, magazines, internet websites, textbooks and literature survey are the secondary sources of data used for the completion of this project.

EMPIRICAL RESULTS

Before any conclusions can be made, the data collected from various respondents must be examined. As a result, efforts have been made in this chapter to assess and gather information

utilizing a questionnaire on "Impact of Artificial Intelligence in Banking Sector with Reference to Private Banks."

The collected data was collected first, and then used to analyze percentage and pie charts.

STATISTICAL TOOLS

Table no 1 - Customer satisfaction and safety in AI

Data collected from customers' perspective Test used Chi-square Table No. 4.35

Case Processing Summary						
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Implementation of AI in Banks increases the safety in transaction* AI gives better experience beyond the customer expectation	170	100.0%	0	.0%	170	100.0%

Table no 2– AI Implementation

Implementation of AI in Banks increases the safety in transaction* AI gives better experience beyond the customer expectation					
	AI gives better experience beyond the customer expectation				Total
	Disagree	Neutral	Agree	Strongly agree	
Strongly disagree	1	3	10	1	15
Disagree	3	10	27	4	44
Neutral	1	18	22	6	47
Agree	1	5	20	2	28
Strongly agree	0	6	18	12	36
Total	6	42	97	25	170

Table no 3

Chi-Square Tests		
Value	df	Asymp. Sig. (2-sided)
22.376a	12	.034
21.289	12	.046
7.134	1	.008
170		
a. 8 cells (40.0%) have expected count less than 5. The minimum expected count is .53.		

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	.363	.034
	Cramer's V	.209	.034
N of Valid Cases		170	

Source: Data collected from primary data and computation of data completed with the help of spps.

Interpretation

An overview of case processing is provided in the first table, which also shows how many valid instances were used for analysis. The test can only take into account examples with non-missing data for both Implementation of AI in Banks increases the safety in transaction AI gives better experience beyond the customer expectation.

The results of the chi-square testing tables are the individual chi-squares. The test statistic is 22.376 in value. The statistic refers to the expectation that all expected cell counts will be greater than 5, which was satisfied because no cell had an expectation that was less than 5. The degree of freedom (df) is 12. The corresponding p-value for the test statistic is p = 0.034. Because the p-value is lesser than the significant level we set (alpha = 0.05), we have to reject the null hypothesis. Instead, we arrive to the conclusion that the evidence is insufficient to establish a connection between Implementation of AI in Banks increases the safety in transaction AI gives better experience beyond the customer expectation.

Chi-square Table no. 4
Digital transaction and customer experience

Case Processing Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
AI Service motivates the customers to do digital transactions * AI gives better experience beyond the customer expectation Cross tabulation	170	100.0%	0	.0%	170	100.0%

AI Service motivates the customers to do digital transactions * AI gives better experience beyond the customer expectation Cross tabulation

			AI gives better experience beyond the customer expectation Cross tabulation				Total
			Disagree	Neutral	Agree	Strongly agree	
AI9	Disagree	Count	1	4	8	0	13
		Expected Count	.5	3.2	7.4	1.9	13.0
	Neutral	Count	1	21	20	5	47
		Expected Count	1.7	11.6	26.8	6.9	47.0
	Agree .	Count	3	12	56	8	79
		Expected Count	2.8	19.5	45.1	11.6	79.0
	Strongly agree	Count	1	5	13	12	31
		Expected Count	1.1	7.7	17.7	4.6	31.0
Total		Count	6	42	97	25	170
		Expected Count	6.0	42.0	97.0	25.0	170.0

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	33.908a	9	.000
Likelihood Ratio	31.302	9	.000
Linear-by-Linear Association	12.720	1	.000
N of Valid Cases	170		

7 cells (43.8%) have expected count less than 5. The minimum expected count is .46.

Symmetric Measures		Value	Approx. Sig.
Nominal by Nominal	Phi	.447	.000
	Cramer's V	.258	.000
N of Valid Cases		170	

Source: Data collected from primary data and computation of data completed with the help of spps.

Interpretation

An overview of case processing is provided in the first table, which also shows how many valid instances were used for analysis. The test can only take into account examples with non-missing data for both Implementation of AI Service motivates the customers to do digital transactions and AI gives better experience beyond the customer expectation.

The results of the chi-square testing tables are the individual chi-squares. The test statistic is 33.908 in value. The statistic refers to the expectation that all expected cell counts will be greater than 5, which was satisfied because no cell had an expectation that was less than 5. The degree of freedom (df) is 9. The corresponding p-value for the test statistic is p = 0.000. Because the p-value is lesser than the significant level we set (alpha = 0.05), we have to reject the null hypothesis. Instead, we arrive to the conclusion that the evidence is insufficient to establish a connection between Implementation of AI in Banks increases the digital transaction and that gives better experience beyond the customer expectation.

Correlation

Table no. 5 Quick and safe transaction in AI and solve the query immediately

Descriptive Statistics	Mean	Std. Deviation	N
AI-based mobile applications can make the transaction quicker & safer	3.89	.942	170
Chatbots helps to solve the queries immediately	3.79	.737	170

Correlations		AI-based mobile applications can make the transaction quicker & safer	Chatbots helps to solve the queries immediately
AI14	Pearson Correlation	1	.113
	Sig. (2-tailed)		.141
	N	170	170
AI10	Pearson Correlation	.113	1
	Sig. (2-tailed)	.141	
	N	170	170

Age of the customer and reduction in human error after implementation of AI

Descriptive Statistics			
	Mean	Std. Deviation	N
Age	2.31	.637	170
Implementation of AI in banking sector reduces the human error	3.86	.824	170

Correlations		Age	Implementation of AI in banking sector reduces the human error
Age	Pearson Correlation	1	.051
	Sig. (2-tailed)		.512
	N	170	170
AI4	Pearson Correlation	.051	1
	Sig. (2-tailed)	.512	
	N	170	170

Interpretation

The first value of Pearson's r i.e., the correlation coefficient. Which in this case 0.051. Pearson's r varies between+1 and -1, 0 means there is no linear correlation at all.

Age of the customer and reduction in human error after implementation of AI these two factors are taken for the test and it shows week positive relation because age of the customer mainly effect to the human error because it is difficult to use aged people compare to young one. Because AI is the new concept.

Table no 7 - Chatbots and quick and safety in transaction

Variables Entered/Removedb			
Model	Variables Entered	Variables Removed	Method
1	Chatbots helps to solve the queries immediately	.	Enter

Table no 8 - All requested variables entered.
Dependent Variable: AI-based mobile applications can make the transaction quicker & safer.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.113a	.013	.007	.939

a. Predictors: (Constant), Chatbots helps to solve the queries immediately

Regression Table no. 9

Annova					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	1.925	1	1.925	2.183	.141a
Residual	148.169	168	.882		
Total	150.094	169			

Predictors: (Constant), Chatbots helps to solve the queries immediately.
Dependent Variable: AI-based mobile applications can make the transaction quicker & safer.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.345	.379		8.829	.000
	Chatbots helps to solve the queries immediately	.145	.098	.113	1.478	.141

Dependent Variable: AI-based mobile applications can make the transaction quicker & safer.

Interpretation

The model summary table provides the R value. The R value is 0.939which indicates a high degree of correlation. Here the regression value is more than 0.05 that is 0.141, so we can accept hypothesis and it shows the high level of correlation between the variables. Chatbots and quick and safety in transaction these both are the variables taken for the test and it shows high correlation because everyone accept that chatbot improve the safety in transaction.

Data collected from Bankers' perspective CHI SQUARE

Table no. 10
Age and positive impact of implementation of AI in banks

Case Processing Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Age * AI positive	30	100.0%	0	.0%	30	100.0%

Age * AI positive Cross tabulation						
			AI_positive			Total
			neutral	agree	strongly agree	
Age	21-30	Count	6	4	4	14
		Expected Count	4.7	4.2	5.1	14.0
	31-50	Count	1	4	2	7
		Expected Count	2.3	2.1	2.6	7.0
	51-60	Count	3	1	3	7
		Expected Count	2.3	2.1	2.6	7.0
	above 60	Count	0	0	2	2
		Expected Count	.7	.6	.7	2.0
Total		Count	10	9	11	30
		Expected Count	10.0	9.0	11.0	30.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2- sided)
Pearson Chi-Square	7.541a	6	.274
Likelihood Ratio	8.065	6	.233
Linear-by-Linear Association	1.793	1	.181
N of Valid Cases	30		

a. 11 cells (91.7%) have expected count less than 5. The minimum expected count is 0.60.

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	.501	.274
	Cramer's V	.355	.274
N of Valid Cases		30	

Interpretation

An overview of case processing is provided in the first table, which also shows how many valid instances were used for analysis. The test can only take into account examples with non-missing data for both age and the implementation of AI impacted positively to the banks.
The results of the chi-square testing tables are the individual chi-squares. The test statistic is 7.541 in value. The statistic refers to the expectation that all expected cell counts will be greater than 5, which was satisfied because no cell had an expectation that was less than 5. The degree of freedom (df) is 6. The corresponding p-value for the test statistic is p = 0.274. Because the p-value is greater than the significant level we set (alpha = 0.05), we have to accept the null hypothesis. Instead, we arrive to the conclusion that the evidence is insufficient to establish a connection between age and the implementation of AI in Banks impacted positively.

Table no. 11
Reduction in Fraud and Customer satisfaction
Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
AI fraud reduction * Customer satisfaction	30	100.0%	0	.0%	30	100.0%

AI fraud reduction * Customer satisfaction Cross tabulation						
			Customer satisfaction			Total
			neutral	agree	strongly agree	
AIfraudreduction	disagree	Count	2	3	0	5
		Expected Count	.8	2.5	1.7	5.0
	neutral	Count	0	3	0	3
		Expected Count	.5	1.5	1.0	3.0
	agree	Count	2	8	5	15
		Expected Count	2.5	7.5	5.0	15.0
	strongly agree	Count	1	1	5	7
		Expected Count	1.2	3.5	2.3	7.0
Total		Count	5	15	10	30

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Expected Count			5.0	15.0	10.0	30.0

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.390a	6	.077
Likelihood Ratio	13.702	6	.033
Linear-by-Linear Association	5.757	1	.016
N of Valid Cases	30		

10 cells (83.3%) have expected count less than 5. The minimum expected count is .50.

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	.616	.077
	Cramer's V	.436	.077
N of Valid Cases		30	

Interpretation

An overview of case processing is provided in the first table, which also shows how many valid instances were used for analysis. The test can only take into account examples with non-missing data for both fraud reduction and customer satisfaction.

The results of the chi-square testing tables are the individual chi-squares. The test statistic is 11.390 in value. The statistic refers to the expectation that all expected cell counts will be greater than 5, which was satisfied because no cell had an expectation that was less than 5. The degree of freedom (df) is 6. The corresponding p-value for the test statistic is p = 0.077. Because the p-value is greater than the significant level we set (alpha = 0.05), we have to accept the null hypothesis. Instead, we arrive to the conclusion that the evidence is insufficient to establish a connection between fraud and customer satisfaction.

Correlation

Table No. 12
Gender and AI is technical

Descriptive Statistics			
	Mean	Std. Deviation	N
Gender	1.33	.479	30
AI technical	3.23	1.431	30

Correlations			
		Gender	AI technical
Gender	Pearson Correlation	1	-.017
	Sig. (2-tailed)		.930
	N	30	30
AI_technical	Pearson Correlation	-.017	1
	Sig. (2-tailed)	.930	
	N	30	30

Interpretation

The first value of Pearsonr i.e., the correlation coefficient. Which in this case -0.017. Pearson's r varies between+1 and -1, 0 means there is no linear correlation at all.

AI is technical and gender these two variables are taken for the test that is correlation. As a result, it shows that their negative relation because everyone accept that AI is technical and experts are needed to operate and that is why implementation of AI in bank is so expensive.

DISCUSSIONS

Out of 200 responses collected as sample for the study, in that 170 response from the customers and 30 from the bankers. It shows that response from the below 18 years and above 60 age group is comparatively very low from the other age group. Because 18-25 years age group customers have more knowledge about AI in banks. Because they more eager to learn new things. Response from the female is 69% and from male is 31%. It shows that females are more interested to transact after the implementation of AI in banks. And have knowledge about AI in banking sector and that reduces the burden. Out of 170 respondents when we take the marital status, 70% from the single and 30% from the married. As result of this finding majority of respondents are single. Less age group people know about this because they do search or try to go with changes happens in the economy. Though it shows that highest response got from the graduate and post graduated educational background people. Educated people know about this and they are do more search about and use this for their daily banking transactions to avoid the waste of time. As a result it shows that most of them are aware about using AI in banks.

Nowadays AI implemented in banks and it helpful to the customer, so everyone know about it. As result implementation of AI in Bank is helps to the customer for their transaction and it impacted positively to the bank because it reduces the complication of banking transactions. As per the survey it shows that AI is easy to access and simplify the banking transaction, everyone easily access and the information relates to how to use everything are available through the search engines. It helps to reduce the error as compare to manual transactions. It gives clear statement about any banking related transactions.

AI reduces the work compare to before and as well it save the time of the customer, because any query can solve through the Chatbots no need to visit bank and solve it. And the transaction will be transparency after the implementation of AI in banking sector that is help to the customer because they trust because the transactions are transference. In this come to know that it is safer for the transaction, because transactions are transparency and it is safe. Through this come to one result that AI avoids the waste of time. Because it reduces the time for going bank for every transaction or any query. As a result it shows that not strongly motivates everyone to deposit money in the bank but customers agree to deposit money in the bank. Because people not ready to keep money in bank but they invest in other source and make profit out of that. As a result it says that Chatbots solve the query immediately in some banks and some are not. But most of the bank solve immediately through this they can save the time and get clarity about the problem. As a result it shows that AI gives better experience to the customer than their expectation, because Chatbots gives information regarding problems, it saves the time and easy way of transactions to the customers.

So it results as it gives notification for the expenses and where to invest in bank and that is helps the customer for their decision regarding the transaction. It provides information to the customer what they really want. As a result it shows that AI provides personal suggestion to the customer about the loan insurance and capital bases it helps the customer that what kind of loan is good for them. As a result it shows that AI based mobile applications are safer and quick for the banking transaction; it is even easy for the transaction, and convenience for

everyone. As a result it shows that regular updates about the financial position of the banks are available and that is easy for the customer to invest feel safe to do the banking transactions. When statements are updated then customer feels safer for their transaction in the bank. The corresponding p-value for the test statistic is p = 0.034.

Because the p-value is lesser than the significant level we set (alpha = 0.05), we have to reject the null hypothesis. Instead, we arrive to the conclusion that the evidence is insufficient to establish a connection between Implementation of AI in Banks increases the safety in transaction AI gives better experience beyond the customer expectation. The results of the chi-square testing tables are the individual chi-squares. The test statistic is 33.908 in value. The corresponding p-value for the test statistic is p = 0.000. Because the p-value is lesser than the significant level we set (alpha = 0.05), we have to reject the null hypothesis.

Instead, we arrive to the conclusion that the evidence is insufficient to establish a connection between implementation of AI in Banks increases the digital transaction and that gives better experience beyond the customer expectation. AI-based mobile applications can make the transaction quicker & safer and chatbots helps to solve the queries immediately, the correlation coefficient between these variable is shown. Which in this case 0.113. Pearson's r varies between+1 and -1, 0 means there is no linear correlation at all. So it indicates positive correlation. Age and implementation of AI in banking sector reduces the human error, the correlation coefficient between these two variable is in this case 0.051. Pearson's r varies between+1 and -1, 0 means there is no linear correlation at all. indicates week positive correlation. Chatbots helps to solve the queries immediately and dependent Variable AI-based mobile applications can make the transaction quicker & safer. The model summarytable provides the R value. The R value is 0.939which indicates a high degree of correlation. Here the regression value is more than 0.05 that is 0.141, so we can accept hypothesis and it shows the high level of correlation between the variables.

Data collected from Bankers' perspective

As a result it shows that 21-30 age group of bankers young and they have knowledge about the implementation of AI in banks and they are more interested in implication of new technology, so there is more response from the 21-30 age group compare to above 60 age group. More male employees are working in private banks and they are enjoying the impact of AI in banks, so the more response got from the male compare to female. Almost every private employee is known about the implementation of AI in banks. Because compare to the nationalized banks private banks are adopted AI in banks.

So more response for yes compare to no. As a result of the above table and pie chart it shows that some branches of banks are implemented and most of the banks are intended to but not started yet because implementation of AI is reduce the work load with less error but that is more expensive. Implementation AI in the bank is important because it attracts the customer and reduces the error and it is more transparency so most of the responses are agree for the particular statement. Bankers are agreeing for the statement that it reduces the man-hour, because almost every works are computerized and machines are doing. As a result it increases the unemployment in the economy.

Though AI provides more information relates to loan and other things it has to give more information to the customers, so bankers strongly agree that they provide transparency of data to the customers. Because of the implementation of AI in banks it provides internal and external client view that is how many are visited website and did transaction with the bank. And how many clients are solving the query these are available, so the bankers agree for that above mentioned statement. Bankers are strongly agree for the statement because AI reduces the error, improve customers count, and solve the problem immediately it reduces the waste

of time.

AI is difficult to access most of them are agree for this and some are disagree, because for this technical knowledge required and if any mistake happened then that will effect entire procedure, so the more consciousness required for this. Technical changes in the bank make changes in banking system. Before this customer has to visit bank for every transaction but now one finger touch everything can do easily. Implementation of AI in banks are more expensive because it requires to install machines and software that are costly, so bankers agree for the statement and some are neutral because it is expensive and it has more benefits as well. 50% of the responses are agree for the statement, because implementation of AI reduces the human error, because it is done through computers not every transaction done by humans.

AI gives customer satisfaction as compare to before. Because nowadays clients are busy and when an emergency they can do easy transactions, so customers are definitely satisfied of implementation of AI in banks. Where the service gets more and favor to the customer at that time client visit there. So the updating is more necessary to survive in this competitive environment. So the bankers agree that AI helps the private banks to stay in the market with this more number of competitions. The results of the chi-square testing tables are the individual chi-squares. The test statistic is 11.390 in value. The corresponding p-value for the test statistic is p = 0.077. Because the p-value is greater than the significant level we set (alpha = 0.05), we have to accept the null hypothesis. Instead, we arrive to the conclusion that the evidence is insufficient to establish a connection between fraud and customer satisfaction. The results of the chi-square testing tables are the individual chi-squares. The test statistic is 11.390 in value.

The corresponding p-value for the test statistic is p = 0.077. Because the p- value is greater than the significant level we set (alpha = 0.05), we have to accept the null hypothesis. Instead, we arrive to the conclusion that the evidence is insufficient to establish a connection between fraud and customer satisfaction. Gender and AI technical are the two variables, the correlation coefficient between these two variable is in this case -0.017. Pearson's r varies between+1 and -1, 0 means there is no linear correlation at all.

SUGGESTIONS

Customers should consider switching to digital transactions because current trends are shifting and it is crucial to stay current and follow them. And also when there is something new come into picture customers should do search and follow that and also avoid them from the any fraud. At the same time when AI implemented in the bank, bank should give awareness or knowledge about that to the people. Because of this people more use this and even one who not ready to accept the changes or one who not know how to use or scare to use they will come to know about the implementation of AI in banks that will help the bank to increase the use of AI in banking sector. This also helps to the success of implementation of AI in banks.

Implementation of AI in banks is very expensive, when it is come to private bank it is difficult to them. So for this government have to give some fund to the implementation of AI in banks because it also develops the country s economy. For this private bank give more importance to the implementation of AI in banks.

As per the result it shows that Artificial Intelligence is one of the expensive because it is technical parts are involved in it. So, while implementing the AI in Banks the employees should get proper training about it otherwise there is difficulty in transaction and customers won't get benefit. And specialized in that area people required and appointing them in the banks is expensive.When implementing the AI in bank there should need proper technology change and experts are required to install and also employer should get training about the technical part. Implementation of AI in bank will be expensive but it reduces the human error

and give proper information about the transaction and any changes regarding to the banks is easily and fast available to the customer. Proper training should be given to the employees and knowledge about the implementation of AI in banks should give to the customer and that will help to succeed the implementation of AI in banking sector.

CONCLUSIONS

The world of banking is shifting faster than ever, with Artificial Intelligence (AI) leading the way in bringing in sea change in the banking industry. Various AI technologies have been applied in banking in fields such as core banking, operational performance, customer support and analytics. For AI, banking is no longer just physical branches, but a brand-new world of modern banks. The introduction of new banking services by modern day banks is helping them to grow and expand. Technology is enabling increased penetration of the banking system, increased cost effectiveness and is making small value transactions possible. Effective use of technology has a multiplier effect on growth and development of banks. Hence with the introduction of artificial intelligence, more customers are attracted, and it is helping the banks to grow more. Banks can apply AI to improve the client experience by empowering frictionless, round the clock client association - however AI in banking applications isn't simply restricted to retail banking services. The back and middle office of investment banking and all other money related supervisions are gaining by AI. Out of 200 responses 170 from the customers and 30 from the banker's point of view and as a result come to know that most of young people aware about implementation of AI in bank. And it is easy to operate but there is more knowledge required for same. As per banker's response to come to know that it is expense to implement AI in banks but it reduces the work pressure and unwanted error. So implementation AI in banks helped most of them.

References

[1]   Birau, R., Spulbar, C., Karbassi Yazdi, A., ShahrAeini, S.A. (2021) Critical success factors for CRM implementation in the Iranian banking sector: A conceptual analysis, Revista de Științe Politice. Revue des Sciences Politiques, No. 69, 32 – 45.

[2]   Karbassi Yazdi, A., Spulbar, C., Hanne, T. & Birau, R. (2022) Ranking performance indicators related to banking by using hybrid multicriteria methods in an uncertain environment: a case study for Iran under COVID-19 conditions, Systems Science & Control Engineering, 10:1, 166-180, DOI: 10.1080/21642583.2022.2052996.

[3]   Mehdiabadi, A., Shahabi, V., Shamsinejad, S., Amiri, M., Spulbar, C., Birau, R. (2022) Investigating Industry 5.0 and Its Impact on the Banking Industry: Requirements, Approaches and Communications, Applied Sciences, 12(10):5126. https://doi.org/10.3390/app12105126.

[4]   Mhlanga, D. (2020) Industry 4.0 in Finance: The Impact of Artificial Intelligence (AI) on Digital Financial Inclusion International Journal of Financial Studies, 8(3):45. https://doi.org/10.3390/ijfs8030045.

[5]   Noreen, U., Shafique, A., Ahmed, Z., Ashfaq, M. (2023) Banking 4.0: Artificial Intelligence (AI) in Banking Industry & Consumer's Perspective. Sustainability, 15(4):3682. https://doi.org/10.3390/su15043682.

[6]   Samartha, V., Shenoy Basthikar, S., Hawaldar, I.T., Spulbar, C., Birau, R., Filip, R.D. (2022) A Study on the Acceptance of Mobile-Banking Applications in India—Unified Theory of Acceptance and Sustainable Use of Technology Model (UTAUT). Sustainability, 14(21):14506. https://doi.org/10.3390/su142114506.

[7]   Singh, T., Pathak, N. (2020a) Yes Bank Debacle: Whom To Blame For Investor Destruction;

Securities Exchange Board Of India (SEBI) Or Reserve Bank Of India (RBI)?, Journal Of Critical Reviews, ISSN- 2394-5125, 7(16), 1459- 1471.

[8]   Singh, T., Pathak, N. (2020b) Emerging Role Of Artificial Intelligence In Indian Banking Sector, Journal Of Critical Reviews, ISSN- 2394-5125, 7(16), 1370- 1373.

QUESTIONNAIRE

Impact of Artificial Intelligence in Banking Sector with the reference to Private Banks (to the customers)

1. Name
2. Email

3. Age
   18-25   26-40   41-60   61-80   Above 80

4. Gender
   Male   Female

5. Marital status
   Married   Single

6. Qualification
   Below SSLC   SSLC   PUC   Graduate   Post Graduate

7. I am aware about the use of AI in banking sector
   Strongly Agree   Agree   Neutral   Disagree   Strongly Agree

8. AI implementation in banking sector has impacted positively.
   Strongly Agree   Agree   Neutral   Disagree   Strongly Agree

9.   Implementation of AI will reduce the work of customers.
Strongly Agree   Agree   Neutral   Disagree   Strongly Agree

10. AI will help to show transparency of Banking Transaction.
Strongly Agree   Agree   Neutral   Disagree   Strongly Agree

11. Implementation of AI in Banks increases the safety in transaction.
 Strongly Agree   Agree   Neutral   Disagree   Strongly Agree

13. AI reduces the waste of time for transaction.
Strongly Agree   Agree   Neutral   Disagree   Strongly Agree

14. AI Service motivates the customers to do digital transactions.
Strongly Agree   Agree   Neutral   Disagree   Strongly Agree

15. Chatbots helps to solve the queries immediately.
Strongly Agree   Agree   Neutral   Disagree   Strongly Agree

16. AI gives better experience beyond the customer expectation.

Strongly Agree   Agree   Neutral   Disagree   Strongly Agree

17. Banks send the notification about the advice for keeping a check on the expenses and investments based on the data
Strongly Agree   Agree   Neutral   Disagree   Strongly Agree
18. AI helps to provide personalised prescriptive suggestions to customers on bank offers related to loan, insurance and other banking products from the captured database of information.
Strongly Agree   Agree   Neutral   Disagree   Strongly Agree

19. AI-based mobile applications can make the transaction quicker & safer.
Strongly Agree   Agree   Neutral   Disagree   Strongly Agree

20. Regular updates are available about the bank, it helps the customer to know the financial position of the bank.

Strongly Agree   Agree   Neutral   Disagree   Strongly Agree

Impact of Artificial Intelligence in Banking Sector with the reference to Private Banks (to the bankers)
1.   Name
2.   Email

3.   Age: 21-30years
            31-50years
            51-60years
            above60years
4.   Gender:
            Male
            Female
            Other

5.   Name of the bank

6.   Designation

7.   Are you familiar with Artificial Intelligence?
       Yes
       No

8.   Regarding Artificial Intelligence (AI) solutions, have you?
       Implemented
       Intend to pursue but not yet started
       Not planning to implement

 9.   Implementation of Artificial Intelligence in banking sector is important.
 Strongly Agree   Agree   Neutral   Disagree
 Strongly disagree

10.   Man-hours were reduced after implementation of Artificial Intelligence in Bank
            Strongly Agree   Agree   Neutral   Disagree
            Strongly disagree

11.   AI helps to provide transparency of data to the customer
 Strongly Agree   Agree   Neutral   Disagree   Strongly disagree

12.   Possible to get a real-time Client View, that combines internal and external data
 Strongly Agree   Agree   Neutral   Disagree   Strongly disagree

 13.   There a significantly positive impact of AI on the performance of bank.
    Strongly Agree   Agree   Neutral   Disagree   Strongly disagree
14.   AI is difficult to access, because it is technical.
 Strongly Agree   Agree   Neutral   Disagree   Strongly disagree

15.   Implementation of AI in Bank Sector changed the banking system.
 Strongly Agree   Agree   Neutral   Disagree   Strongly disagree

16.   Implementation of AI in Bank is expensive.

 Strongly Agree   Agree   Neutral   Disagree   Strongly disagree
17.   AI helps the Bank to reduce the fraud and error.
 Strongly Agree   Agree   Neutral   Disagree   Strongly disagree

18.   Implementation of AI in Banking Sector improves the Customer Satisfaction.
 Strongly Agree   Agree   Neutral   Disagree   Strongly disagree

19.   AI helps the Bank to survive and success in the competitive environment.
 Strongly Agree   Agree   Neutral   Disagree   Strongly disagree

Impact of Artificial Intelligence in Banking Sector with Reference to Private Banks in India

Sharan Kumar SHETTY
Manel Srinivas Nayak Institute of Management
sharansai25@gmail.com

Cristi SPULBAR
Faculty of Economics and Business Administration, University of Craiova, Craiova, Romania, cristi_spulbar@yahoo.com

Ramona BIRAU
Faculty of Economic Science, University Constantin Brancusi, Tg-Jiu, Romania
ramona.f.birau@gmail.com

Robert Dorin FILIP
University of Craiova, Doctoral School of Economic Sciences, Craiova, Romania
filiprobertdorin@gmail.com

Abstract

After the implementation of AI in Banks it is difficult to access some of them and at the starting stage people not ready to take risk. The study's data was gathered from primary and secondary sources of data. This study was done to know how the implementation of AI in banks impacted to the customer and to the bankers, is it really helps to the work or transaction or not. A variety of hypothesis were developed and evaluated in order to fulfil the goals of valuable suggestion that would benefit the customer for their easy transaction and to the banker to reduce burden of work. We gathered data for the study from both the primary and secondary aspects of data. The primary data collected from the customer is 170 and from the banker is 30 samples. As per customer point of view and banker's point of view total 200 primary data were collected for the study. From axis bank, ICICI bank, Karnataka bank, HDFC bank, etc. primary data collected as a banker point of view. For more information, secondary data were used that is from books, magazines, and from the websites. And chi square, correlation and regression statistical tools are used for the test.

Keywords: Artificial Intelligence; Mobile banking; Private Banks; Customers; emerging economy

INTRODUCTION

Artificial intelligence (AI) is the ability of a computer or a robot controlled by a computer to do tasks that normally require human intelligence and discernment. It is a simulation of human intelligence in machine that think and act like humans. Artificial Intelligence used in different industries like finance, health care, etc.

AI is also implemented in banking sector that is implemented to detect the fraud, solve the customer query, tracking customer behavior and recommending personalized service to them. Artificial intelligence (AI) is one technology that will alter the banking industry; banks are becoming more popular among customers. Traditional banks have begun to offer more online services as well. Artificial intelligence helps them automate procedures, make better judgments, and handle customer support requests with fewer resources. Also helps with risk management by detecting and combating fraud and money laundering in real time. Artificial intelligence can be applied in a variety of ways to improve the banking business. Banks can utilize AI to improve the customer experience by providing frictionless, 24/7 interactions; however, AI in banking apps isn't confined to retail banking. Investment banking's back and middle offices, as well as all other financial services, could benefit from AI. After India's independence, the government intended to nationalize the banks because all of the main banks were privately owned; this was a source of concern because people in rural areas still relied on money lenders for help. Reserve Bank of India was nationalized in 1949. Nationalization of the banking system improves the economy's overall health, creates more job opportunities, and boosts the country's rural and agricultural sectors.

Making internal operations efficient and the customer experience more effective has undoubtedly become a challenge following the demonetization average of Indian consumers becoming comfortable with internet banking. One of the major issues facing banks today is poor data quality and customer segmentation.

With the emergence of technology-oriented payments banks such as Airtel Payments Bank, Paytm Payments Bank, and others, as well as the arrival of neo banks and neo banking platforms, as well as the advent of NBFCs, banks are finding it increasingly difficult to survive in the old paradigm.

AI refers to a system that can see the world around it, analyze and interpret the data it gets, act on that understanding, and improve its performance by learning from its mistakes. And, by allowing robots to interact more naturally with their surroundings, people, and data, technology can expand both humans and machines' capacities well beyond what they can do on their own.

The banking industry has been transformed by artificial intelligence (AI). For greater development possibilities and to better serve new-age consumers, banks are actively implementing new-age technologies. AI is assisting banks in transforming their operations across the board, from accounting to sales to contracts and cybersecurity, Banks are future-proofing their offerings and services with data analytics, block chain, and machine learning.

AI in banking and finance is improving bank and financial company performance and competitiveness. Banks are applying AI to identify fraud, improve customer experience, track customer behavior to offer more tailored services, analyze client credit histories to anticipate risks associated with loan allocation, and many other purposes. Banks are implemented AI in some areas that are as follows: One of the key use cases of AI in the banking business is AI-based chatbot service. It is the modern way of providing service to the customers. AI chatbots in the banking business may serve consumers 24 hours a day, seven days a week and provide correct answers to their questions. These chatbots provide users a customized experience. As a result, AI chatbots for banking and financial operations enable banks to grab client attention, improve service quality, and grow their brand's market presence. Based on user search trends, intelligent mobile apps may monitor user behavior and extract insightful information. These data would aid service providers in making tailored suggestions to customers.

PROBLEM STATEMENT

There is a barter system in India, that time it is very difficult to transact and trade. After that paper notes came to picture and people use the paper currency for the transaction and that feels easy and convenience to transaction and that gives proper value as well.
In the case of banking transaction there need to visit bank and do the transaction. If there is any query then have to go to bank and solve, even the waste of time and errors are more. Implementation of AI reduce the time consuming and error in the transaction but negatively it increases the unemployment.

OBJECTIVE

1. To study the Artificial Intelligence in the banking sector and how it impacted to the customers.
2. To study the influence of AI in to the bankers.
3. To assess the challenges of bankers in the implementation of AI.
4. To examine the performance of banking sector post implementation of Artificial Intelligence.

LITERATURE REVIEW

Singh and Pathak (2020a) argued that an emerging country such as India is not very focused on digitalization so the distribution channels are very important in the context of the buying and selling process of investment for financial tools and assets. The research study also discussed about the the measures implemented by Reserve Bank of India (RBI) in the context of COVID-19 pandemic but also about Securities Exchange Board of India also known as SEBI and the volatility of stock prices.

Noreen et al. (2023) suggested that the banking industry can use suitable methods based on artificial intelligence in order to improve the quality of customer services as well as the banks' performance indicators. Karbassi Yazdi et al. (2022) argued that service industry is essential for a sustainable the economic development, especially because unlike traditional sectors the dependence on conventional resources is much reduced and it is open to the application of new and innovative business models. Birau et al. (2021) also suggested that the banking system is a vital mechanism in terms of reaching a sustainable level of development of the global economy.

Singh and Pathak (2020b) defined the concept of artificial intelligence such as "*the ability of machines to think on their own and do a task without the help of human beings*". The banking industry represents a data - intensive domain very compatible with artificial intelligence or machine intelligence and its such as the following: the field of machine learning (ML), Natural Language Processing also known as NLP, Deep Learning, interactive voice response (IVR), Speech Recognition or speech- to- text, image analysis and many others.

Mhlanga (2020) investigated the effect of Artificial Intelligence on the process of digital financial inclusion, while highlighting the importance of aspects such as: chatbots, fraud detection and cybersecurity in the context of improving the quality of services provided to bank customers.

Mehdiabadi et al. (2022) suggested that the concept of banking 5.0 is based on the architecture of an industrial revolution generated by artificial intelligence. Moreover, Samartha et al. (2022) examined the impact of mobile-banking applications and online transactions using "Unified theory of acceptance and use of technology" (UTAUT) modified model based on a case study for India which is an emerging country.

NEED FOR THE STUDY

Need for this study is whether the implementation of Artificial Intelligence in banking sector is positively impacted to the bank and the customer or to the clients. AI impacted positively, then how it actually effected to the bankers and to the customer for their transactions.
Chatbots is really solving the query of the customer immediately, it gives detail about the loan and what and all improvements are happened after the implementation of AI in banks. After the implementation of AI what and all problems happened to the customer and banks and what are the factor which really positively improved the banking transactions.

RESEARCH METHODOLOGY

Research approach was used to attain the project goal. To complete the project goal gathered information from the primary and secondary data. This is a descriptive study; it divided the large problem in to smaller one. More specific problems and stresses the discovery of fresh ideas and insights. Out of 138 crore population in India, in that divided private bank customer and the banker and based on that 200 sample collected for the study.

Sample means group of the population chosen for the study. Customers of Private Banks and the Bankers of Private Banking Sectors are included in the sample for the study.
Sample Size

Number of sample units are collected for the study is known as sample size. 170 respondents are taken from the customers of private banks. How the application of Artificial Intelligence in banks affected their banking transactions. 30 respondents are collected form the Bank employees.
Sampling Procedure

The Random sampling technique was adopted to select the respondents for the study purpose. Primary method was used to collect the data. There were two parts in the questionnaire Part A is Demographic details and Part B will be Conceptual questions.
Sample Design

Data presented with the help of pie charts, chi square, correlation and regression.

SOURCE OF DATA COLLECTION

Primary data secondary data were collected for this research. Questionnaires were used to collect primary data. There were both open ended and closed ended question used in the questionnaire. Separate questionnaires prepared for the customers and the bankers.
Journals, magazines, internet websites, textbooks and literature survey are the secondary sources of data used for the completion of this project.

EMPIRICAL RESULTS

Before any conclusions can be made, the data collected from various respondents must be examined. As a result, efforts have been made in this chapter to assess and gather information

utilizing a questionnaire on "Impact of Artificial Intelligence in Banking Sector with Reference to Private Banks."

The collected data was collected first, and then used to analyze percentage and pie charts.

STATISTICAL TOOLS

Table no 1 - Customer satisfaction and safety in AI

Data collected from customers' perspective Test used Chi-square Table No. 4.35

Case Processing Summary						
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Implementation of AI in Banks increases the safety in transaction* AI gives better experience beyond the customer expectation	170	100.0%	0	.0%	170	100.0%

Table no 2– AI Implementation

Implementation of AI in Banks increases the safety in transaction* AI gives better experience beyond the customer expectation					
	AI gives better experience beyond the customer expectation				Total
	Disagree	Neutral	Agree	Strongly agree	
Strongly disagree	1	3	10	1	15
Disagree	3	10	27	4	44
Neutral	1	18	22	6	47
Agree	1	5	20	2	28
Strongly agree	0	6	18	12	36
Total	6	42	97	25	170

Table no 3

Chi-Square Tests		
Value	df	Asymp. Sig. (2-sided)
22.376a	12	.034
21.289	12	.046
7.134	1	.008
170		
a. 8 cells (40.0%) have expected count less than 5. The minimum expected count is .53.		

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	.363	.034
	Cramer's V	.209	.034
N of Valid Cases		170	

Source: Data collected from primary data and computation of data completed with the help of spps.

Interpretation

An overview of case processing is provided in the first table, which also shows how many valid instances were used for analysis. The test can only take into account examples with non-missing data for both Implementation of AI in Banks increases the safety in transaction AI gives better experience beyond the customer expectation.

The results of the chi-square testing tables are the individual chi-squares. The test statistic is 22.376 in value. The statistic refers to the expectation that all expected cell counts will be greater than 5, which was satisfied because no cell had an expectation that was less than 5. The degree of freedom (df) is 12. The corresponding p-value for the test statistic is p = 0.034. Because the p-value is lesser than the significant level we set (alpha = 0.05), we have to reject the null hypothesis. Instead, we arrive to the conclusion that the evidence is insufficient to establish a connection between Implementation of AI in Banks increases the safety in transaction AI gives better experience beyond the customer expectation.

Chi-square Table no. 4
Digital transaction and customer experience

Case Processing Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
AI Service motivates the customers to do digital transactions * AI gives better experience beyond the customer expectation Cross tabulation	170	100.0%	0	.0%	170	100.0%

AI Service motivates the customers to do digital transactions * AI gives better experience beyond the customer expectation Cross tabulation

			AI gives better experience beyond the customer expectation Cross tabulation				Total
			Disagree	Neutral	Agree	Strongly agree	
AI9	Disagree	Count	1	4	8	0	13
		Expected Count	.5	3.2	7.4	1.9	13.0
	Neutral	Count	1	21	20	5	47
		Expected Count	1.7	11.6	26.8	6.9	47.0
	Agree .	Count	3	12	56	8	79
		Expected Count	2.8	19.5	45.1	11.6	79.0
	Strongly agree	Count	1	5	13	12	31
		Expected Count	1.1	7.7	17.7	4.6	31.0
Total		Count	6	42	97	25	170
		Expected Count	6.0	42.0	97.0	25.0	170.0

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	33.908a	9	.000
Likelihood Ratio	31.302	9	.000
Linear-by-Linear Association	12.720	1	.000
N of Valid Cases	170		

7 cells (43.8%) have expected count less than 5. The minimum expected count is .46.

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	.447	.000
	Cramer's V	.258	.000
N of Valid Cases		170	

Source: Data collected from primary data and computation of data completed with the help of spps.

Interpretation

An overview of case processing is provided in the first table, which also shows how many valid instances were used for analysis. The test can only take into account examples with non-missing data for both Implementation of AI Service motivates the customers to do digital transactions and AI gives better experience beyond the customer expectation.

The results of the chi-square testing tables are the individual chi-squares. The test statistic is 33.908 in value. The statistic refers to the expectation that all expected cell counts will be greater than 5, which was satisfied because no cell had an expectation that was less than 5. The degree of freedom (df) is 9. The corresponding p-value for the test statistic is p = 0.000. Because the p-value is lesser than the significant level we set (alpha = 0.05), we have to reject the null hypothesis. Instead, we arrive to the conclusion that the evidence is insufficient to establish a connection between Implementation of AI in Banks increases the digital transaction and that gives better experience beyond the customer expectation.

Correlation

Table no. 5 Quick and safe transaction in AI and solve the query immediately

Descriptive Statistics			
	Mean	Std. Deviation	N
AI-based mobile applications can make the transaction quicker & safer	3.89	.942	170
Chatbots helps to solve the queries immediately	3.79	.737	170

Correlations		AI-based mobile applications can make the transaction quicker & safer	Chatbots helps to solve the queries immediately
AI14	Pearson Correlation	1	.113
	Sig. (2-tailed)		.141
	N	170	170
AI10	Pearson Correlation	.113	1
	Sig. (2-tailed)	.141	
	N	170	170

Table no. 6

Age of the customer and reduction in human error after implementation of AI

Descriptive Statistics			
	Mean	Std. Deviation	N
Age	2.31	.637	170
Implementation of AI in banking sector reduces the human error	3.86	.824	170

Correlations		Age	Implementation of AI in banking sector reduces the human error
Age	Pearson Correlation	1	.051
	Sig. (2-tailed)		.512
	N	170	170
AI4	Pearson Correlation	.051	1
	Sig. (2-tailed)	.512	
	N	170	170

Interpretation

The first value of Pearson's r i.e., the correlation coefficient. Which in this case 0.051. Pearson's r varies between+1 and -1, 0 means there is no linear correlation at all.

Age of the customer and reduction in human error after implementation of AI these two factors are taken for the test and it shows week positive relation because age of the customer mainly effect to the human error because it is difficult to use aged people compare to young one. Because AI is the new concept.

Table no 7 - Chatbots and quick and safety in transaction

Variables Entered/Removedb			
Model	Variables Entered	Variables Removed	Method
1	Chatbots helps to solve the queries immediately	.	Enter

Table no 8 - All requested variables entered.

Dependent Variable: AI-based mobile applications can make the transaction quicker & safer.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.113a	.013	.007	.939

a. Predictors: (Constant), Chatbots helps to solve the queries immediately

Regression Table no. 9

Annova					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	1.925	1	1.925	2.183	.141a
Residual	148.169	168	.882		
Total	150.094	169			

Predictors: (Constant), Chatbots helps to solve the queries immediately.
Dependent Variable: AI-based mobile applications can make the transaction quicker & safer.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.345	.379		8.829	.000
	Chatbots helps to solve the queries immediately	.145	.098	.113	1.478	.141

Dependent Variable: AI-based mobile applications can make the transaction quicker & safer.

Interpretation

The model summary table provides the R value. The R value is 0.939which indicates a high degree of correlation. Here the regression value is more than 0.05 that is 0.141, so we can accept hypothesis and it shows the high level of correlation between the variables. Chatbots and quick and safety in transaction these both are the variables taken for the test and it shows high correlation because everyone accept that chatbot improve the safety in transaction.

Data collected from Bankers' perspective CHI SQUARE

Table no. 10
Age and positive impact of implementation of AI in banks

Case Processing Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Age * AI positive	30	100.0%	0	.0%	30	100.0%

Age * AI positive Cross tabulation						
			AI_positive			Total
			neutral	agree	strongly agree	
Age	21-30	Count	6	4	4	14
		Expected Count	4.7	4.2	5.1	14.0
	31-50	Count	1	4	2	7
		Expected Count	2.3	2.1	2.6	7.0
	51-60	Count	3	1	3	7
		Expected Count	2.3	2.1	2.6	7.0
	above 60	Count	0	0	2	2
		Expected Count	.7	.6	.7	2.0
Total		Count	10	9	11	30
		Expected Count	10.0	9.0	11.0	30.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2- sided)
Pearson Chi-Square	7.541a	6	.274
Likelihood Ratio	8.065	6	.233
Linear-by-Linear Association	1.793	1	.181
N of Valid Cases	30		

a. 11 cells (91.7%) have expected count less than 5. The minimum expected count is 0.60.

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	.501	.274
	Cramer's V	.355	.274
N of Valid Cases		30	

Interpretation

An overview of case processing is provided in the first table, which also shows how many valid instances were used for analysis. The test can only take into account examples with non-missing data for both age and the implementation of AI impacted positively to the banks.
The results of the chi-square testing tables are the individual chi-squares. The test statistic is 7.541 in value. The statistic refers to the expectation that all expected cell counts will be greater than 5, which was satisfied because no cell had an expectation that was less than 5. The degree of freedom (df) is 6. The corresponding p-value for the test statistic is p = 0.274. Because the p-value is greater than the significant level we set (alpha = 0.05), we have to accept the null hypothesis. Instead, we arrive to the conclusion that the evidence is insufficient to establish a connection between age and the implementation of AI in Banks impacted positively.

Table no. 11
Reduction in Fraud and Customer satisfaction
Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
AI fraud reduction * Customer satisfaction	30	100.0%	0	.0%	30	100.0%

AI fraud reduction * Customer satisfaction Cross tabulation						
			Customer satisfaction			Total
			neutral	agree	strongly agree	
AIfraudreduction	disagree	Count	2	3	0	5
		Expected Count	.8	2.5	1.7	5.0
	neutral	Count	0	3	0	3
		Expected Count	.5	1.5	1.0	3.0
	agree	Count	2	8	5	15
		Expected Count	2.5	7.5	5.0	15.0
	strongly agree	Count	1	1	5	7
		Expected Count	1.2	3.5	2.3	7.0
Total		Count	5	15	10	30

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Expected Count			5.0	15.0	10.0	30.0

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.390a	6	.077
Likelihood Ratio	13.702	6	.033
Linear-by-Linear Association	5.757	1	.016
N of Valid Cases	30		

10 cells (83.3%) have expected count less than 5. The minimum expected count is .50.

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	.616	.077
	Cramer's V	.436	.077
N of Valid Cases		30	

Interpretation

An overview of case processing is provided in the first table, which also shows how many valid instances were used for analysis. The test can only take into account examples with non-missing data for both fraud reduction and customer satisfaction.

The results of the chi-square testing tables are the individual chi-squares. The test statistic is 11.390 in value. The statistic refers to the expectation that all expected cell counts will be greater than 5, which was satisfied because no cell had an expectation that was less than 5. The degree of freedom (df) is 6. The corresponding p-value for the test statistic is p = 0.077. Because the p-value is greater than the significant level we set (alpha = 0.05), we have to accept the null hypothesis. Instead, we arrive to the conclusion that the evidence is insufficient to establish a connection between fraud and customer satisfaction.

Correlation

Table No. 12

Gender and AI is technical

Descriptive Statistics			
	Mean	Std. Deviation	N
Gender	1.33	.479	30
AI technical	3.23	1.431	30

Correlations			
		Gender	AI technical
Gender	Pearson Correlation	1	-.017
	Sig. (2-tailed)		.930
	N	30	30
AI_technical	Pearson Correlation	-.017	1
	Sig. (2-tailed)	.930	
	N	30	30

Interpretation

The first value of Pearsonr i.e., the correlation coefficient. Which in this case -0.017. Pearson's r varies between+1 and -1, 0 means there is no linear correlation at all.

AI is technical and gender these two variables are taken for the test that is correlation. As a result, it shows that their negative relation because everyone accept that AI is technical and experts are needed to operate and that is why implementation of AI in bank is so expensive.

DISCUSSIONS

Out of 200 responses collected as sample for the study, in that 170 response from the customers and 30 from the bankers. It shows that response from the below 18 years and above 60 age group is comparatively very low from the other age group. Because 18-25 years age group customers have more knowledge about AI in banks. Because they more eager to learn new things. Response from the female is 69% and from male is 31%. It shows that females are more interested to transact after the implementation of AI in banks. And have knowledge about AI in banking sector and that reduces the burden. Out of 170 respondents when we take the marital status, 70% from the single and 30% from the married. As result of this finding majority of respondents are single. Less age group people know about this because they do search or try to go with changes happens in the economy. Though it shows that highest response got from the graduate and post graduated educational background people. Educated people know about this and they are do more search about and use this for their daily banking transactions to avoid the waste of time. As a result it shows that most of them are aware about using AI in banks.

Nowadays AI implemented in banks and it helpful to the customer, so everyone know about it. As result implementation of AI in Bank is helps to the customer for their transaction and it impacted positively to the bank because it reduces the complication of banking transactions. As per the survey it shows that AI is easy to access and simplify the banking transaction, everyone easily access and the information relates to how to use everything are available through the search engines. It helps to reduce the error as compare to manual transactions. It gives clear statement about any banking related transactions.

AI reduces the work compare to before and as well it save the time of the customer, because any query can solve through the Chatbots no need to visit bank and solve it. And the transaction will be transparency after the implementation of AI in banking sector that is help to the customer because they trust because the transactions are transference. In this come to know that it is safer for the transaction, because transactions are transparency and it is safe. Through this come to one result that AI avoids the waste of time. Because it reduces the time for going bank for every transaction or any query. As a result it shows that not strongly motivates everyone to deposit money in the bank but customers agree to deposit money in the bank. Because people not ready to keep money in bank but they invest in other source and make profit out of that. As a result it says that Chatbots solve the query immediately in some banks and some are not. But most of the bank solve immediately through this they can save the time and get clarity about the problem. As a result it shows that AI gives better experience to the customer than their expectation, because Chatbots gives information regarding problems, it saves the time and easy way of transactions to the customers.

So it results as it gives notification for the expenses and where to invest in bank and that is helps the customer for their decision regarding the transaction. It provides information to the customer what they really want. As a result it shows that AI provides personal suggestion to the customer about the loan insurance and capital bases it helps the customer that what kind of loan is good for them. As a result it shows that AI based mobile applications are safer and quick for the banking transaction; it is even easy for the transaction, and convenience for

everyone. As a result it shows that regular updates about the financial position of the banks are available and that is easy for the customer to invest feel safe to do the banking transactions. When statements are updated then customer feels safer for their transaction in the bank. The corresponding p-value for the test statistic is p = 0.034.

Because the p-value is lesser than the significant level we set (alpha = 0.05), we have to reject the null hypothesis. Instead, we arrive to the conclusion that the evidence is insufficient to establish a connection between Implementation of AI in Banks increases the safety in transaction AI gives better experience beyond the customer expectation. The results of the chi-square testing tables are the individual chi-squares. The test statistic is 33.908 in value. The corresponding p-value for the test statistic is p = 0.000. Because the p-value is lesser than the significant level we set (alpha = 0.05), we have to reject the null hypothesis.

Instead, we arrive to the conclusion that the evidence is insufficient to establish a connection between implementation of AI in Banks increases the digital transaction and that gives better experience beyond the customer expectation. AI-based mobile applications can make the transaction quicker & safer and chatbots helps to solve the queries immediately, the correlation coefficient between these variable is shown. Which in this case 0.113. Pearson's r varies between+1 and -1, 0 means there is no linear correlation at all. So it indicates positive correlation. Age and implementation of AI in banking sector reduces the human error, the correlation coefficient between these two variable is in this case 0.051. Pearson's r varies between+1 and -1, 0 means there is no linear correlation at all. indicates week positive correlation. Chatbots helps to solve the queries immediately and dependent Variable AI-based mobile applications can make the transaction quicker & safer. The model summarytable provides the R value. The R value is 0.939which indicates a high degree of correlation. Here the regression value is more than 0.05 that is 0.141, so we can accept hypothesis and it shows the high level of correlation between the variables.

Data collected from Bankers' perspective

As a result it shows that 21-30 age group of bankers young and they have knowledge about the implementation of AI in banks and they are more interested in implication of new technology, so there is more response from the 21-30 age group compare to above 60 age group. More male employees are working in private banks and they are enjoying the impact of AI in banks, so the more response got from the male compare to female. Almost every private employee is known about the implementation of AI in banks. Because compare to the nationalized banks private banks are adopted AI in banks.

So more response for yes compare to no. As a result of the above table and pie chart it shows that some branches of banks are implemented and most of the banks are intended to but not started yet because implementation of AI is reduce the work load with less error but that is more expensive. Implementation AI in the bank is important because it attracts the customer and reduces the error and it is more transparency so most of the responses are agree for the particular statement. Bankers are agreeing for the statement that it reduces the man-hour, because almost every works are computerized and machines are doing. As a result it increases the unemployment in the economy.

Though AI provides more information relates to loan and other things it has to give more information to the customers, so bankers strongly agree that they provide transparency of data to the customers. Because of the implementation of AI in banks it provides internal and external client view that is how many are visited website and did transaction with the bank. And how many clients are solving the query these are available, so the bankers agree for that above mentioned statement. Bankers are strongly agree for the statement because AI reduces the error, improve customers count, and solve the problem immediately it reduces the waste

of time.

AI is difficult to access most of them are agree for this and some are disagree, because for this technical knowledge required and if any mistake happened then that will effect entire procedure, so the more consciousness required for this. Technical changes in the bank make changes in banking system. Before this customer has to visit bank for every transaction but now one finger touch everything can do easily. Implementation of AI in banks are more expensive because it requires to install machines and software that are costly, so bankers agree for the statement and some are neutral because it is expensive and it has more benefits as well. 50% of the responses are agree for the statement, because implementation of AI reduces the human error, because it is done through computers not every transaction done by humans.

AI gives customer satisfaction as compare to before. Because nowadays clients are busy and when an emergency they can do easy transactions, so customers are definitely satisfied of implementation of AI in banks. Where the service gets more and favor to the customer at that time client visit there. So the updating is more necessary to survive in this competitive environment. So the bankers agree that AI helps the private banks to stay in the market with this more number of competitions. The results of the chi-square testing tables are the individual chi-squares. The test statistic is 11.390 in value. The corresponding p-value for the test statistic is p = 0.077. Because the p-value is greater than the significant level we set (alpha = 0.05), we have to accept the null hypothesis. Instead, we arrive to the conclusion that the evidence is insufficient to establish a connection between fraud and customer satisfaction. The results of the chi-square testing tables are the individual chi-squares. The test statistic is 11.390 in value.

The corresponding p-value for the test statistic is p = 0.077. Because the p- value is greater than the significant level we set (alpha = 0.05), we have to accept the null hypothesis. Instead, we arrive to the conclusion that the evidence is insufficient to establish a connection between fraud and customer satisfaction. Gender and AI technical are the two variables, the correlation coefficient between these two variable is in this case -0.017. Pearson's r varies between+1 and -1, 0 means there is no linear correlation at all.

SUGGESTIONS

Customers should consider switching to digital transactions because current trends are shifting and it is crucial to stay current and follow them. And also when there is something new come into picture customers should do search and follow that and also avoid them from the any fraud. At the same time when AI implemented in the bank, bank should give awareness or knowledge about that to the people. Because of this people more use this and even one who not ready to accept the changes or one who not know how to use or scare to use they will come to know about the implementation of AI in banks that will help the bank to increase the use of AI in banking sector. This also helps to the success of implementation of AI in banks.

Implementation of AI in banks is very expensive, when it is come to private bank it is difficult to them. So for this government have to give some fund to the implementation of AI in banks because it also develops the country s economy. For this private bank give more importance to the implementation of AI in banks.

As per the result it shows that Artificial Intelligence is one of the expensive because it is technical parts are involved in it. So, while implementing the AI in Banks the employees should get proper training about it otherwise there is difficulty in transaction and customers won't get benefit. And specialized in that area people required and appointing them in the banks is expensive.When implementing the AI in bank there should need proper technology change and experts are required to install and also employer should get training about the technical part. Implementation of AI in bank will be expensive but it reduces the human error

and give proper information about the transaction and any changes regarding to the banks is easily and fast available to the customer. Proper training should be given to the employees and knowledge about the implementation of AI in banks should give to the customer and that will help to succeed the implementation of AI in banking sector.

CONCLUSIONS

The world of banking is shifting faster than ever, with Artificial Intelligence (AI) leading the way in bringing in sea change in the banking industry. Various AI technologies have been applied in banking in fields such as core banking, operational performance, customer support and analytics. For AI, banking is no longer just physical branches, but a brand-new world of modern banks. The introduction of new banking services by modern day banks is helping them to grow and expand. Technology is enabling increased penetration of the banking system, increased cost effectiveness and is making small value transactions possible. Effective use of technology has a multiplier effect on growth and development of banks. Hence with the introduction of artificial intelligence, more customers are attracted, and it is helping the banks to grow more. Banks can apply AI to improve the client experience by empowering frictionless, round the clock client association - however AI in banking applications isn't simply restricted to retail banking services. The back and middle office of investment banking and all other money related supervisions are gaining by AI. Out of 200 responses 170 from the customers and 30 from the banker's point of view and as a result come to know that most of young people aware about implementation of AI in bank. And it is easy to operate but there is more knowledge required for same. As per banker's response to come to know that it is expense to implement AI in banks but it reduces the work pressure and unwanted error. So implementation AI in banks helped most of them.

References

[1]   Birau, R., Spulbar, C., Karbassi Yazdi, A., ShahrAeini, S.A. (2021) Critical success factors for CRM implementation in the Iranian banking sector: A conceptual analysis, Revista de Științe Politice. Revue des Sciences Politiques, No. 69, 32 – 45.

[2]   Karbassi Yazdi, A., Spulbar, C., Hanne, T. & Birau, R. (2022) Ranking performance indicators related to banking by using hybrid multicriteria methods in an uncertain environment: a case study for Iran under COVID-19 conditions, Systems Science & Control Engineering, 10:1, 166-180, DOI: 10.1080/21642583.2022.2052996.

[3]   Mehdiabadi, A., Shahabi, V., Shamsinejad, S., Amiri, M., Spulbar, C., Birau, R. (2022) Investigating Industry 5.0 and Its Impact on the Banking Industry: Requirements, Approaches and Communications, Applied Sciences, 12(10):5126. https://doi.org/10.3390/app12105126.

[4]   Mhlanga, D. (2020) Industry 4.0 in Finance: The Impact of Artificial Intelligence (AI) on Digital Financial Inclusion International Journal of Financial Studies, 8(3):45. https://doi.org/10.3390/ijfs8030045.

[5]   Noreen, U., Shafique, A., Ahmed, Z., Ashfaq, M. (2023) Banking 4.0: Artificial Intelligence (AI) in Banking Industry & Consumer's Perspective. Sustainability, 15(4):3682. https://doi.org/10.3390/su15043682.

[6]   Samartha, V., Shenoy Basthikar, S., Hawaldar, I.T., Spulbar, C., Birau, R., Filip, R.D. (2022) A Study on the Acceptance of Mobile-Banking Applications in India—Unified Theory of Acceptance and Sustainable Use of Technology Model (UTAUT). Sustainability, 14(21):14506. https://doi.org/10.3390/su142114506.

[7]   Singh, T., Pathak, N. (2020a) Yes Bank Debacle: Whom To Blame For Investor Destruction;

Securities Exchange Board Of India (SEBI) Or Reserve Bank Of India (RBI)?, Journal Of Critical Reviews, ISSN- 2394-5125, 7(16), 1459- 1471.

[8]   Singh, T., Pathak, N. (2020b) Emerging Role Of Artificial Intelligence In Indian Banking Sector, Journal Of Critical Reviews, ISSN- 2394-5125, 7(16), 1370- 1373.

QUESTIONNAIRE

Impact of Artificial Intelligence in Banking Sector with the reference to Private Banks (to the customers)
  1. Name
  2. Email

  3. Age
        18-25   26-40   41-60   61-80   Above 80

  4. Gender
        Male   Female

  5. Marital status
        Married   Single

  6. Qualification
        Below SSLC   SSLC   PUC   Graduate   Post Graduate

  7. I am aware about the use of AI in banking sector
        Strongly Agree   Agree   Neutral   Disagree   Strongly Agree

  8. AI implementation in banking sector has impacted positively.
        Strongly Agree   Agree   Neutral   Disagree   Strongly Agree

  9.   Implementation of AI will reduce the work of customers.
Strongly Agree   Agree   Neutral   Disagree   Strongly Agree

  10. AI will help to show transparency of Banking Transaction.
Strongly Agree   Agree   Neutral   Disagree   Strongly Agree

  11. Implementation of AI in Banks increases the safety in transaction.
 Strongly Agree   Agree   Neutral   Disagree   Strongly Agree

  13. AI reduces the waste of time for transaction.
Strongly Agree   Agree   Neutral   Disagree   Strongly Agree

  14. AI Service motivates the customers to do digital transactions.
Strongly Agree   Agree   Neutral   Disagree   Strongly Agree

  15. Chatbots helps to solve the queries immediately.
Strongly Agree   Agree   Neutral   Disagree   Strongly Agree

  16. AI gives better experience beyond the customer expectation.

Strongly Agree   Agree   Neutral   Disagree   Strongly Agree

  17. Banks send the notification about the advice for keeping a check on the expenses and investments based on the data
Strongly Agree   Agree   Neutral   Disagree   Strongly Agree
  18. AI helps to provide personalised prescriptive suggestions to customers on bank offers related to loan, insurance and other banking products from the captured database of information.
Strongly Agree   Agree   Neutral   Disagree   Strongly Agree

  19. AI-based mobile applications can make the transaction quicker & safer.
Strongly Agree   Agree   Neutral   Disagree   Strongly Agree

  20. Regular updates are available about the bank, it helps the customer to know the financial position of the bank.

Strongly Agree   Agree   Neutral   Disagree   Strongly Agree

Impact of Artificial Intelligence in Banking Sector with the reference to Private Banks (to the bankers)
1. Name
2. Email

3. Age: 21-30years
       31-50years
       51-60years
       above60years
4. Gender:
      Male
      Female
      Other

5. Name of the bank

6. Designation

7. Are you familiar with Artificial Intelligence?
   Yes
   No

8. Regarding Artificial Intelligence (AI) solutions, have you?
   Implemented
   Intend to pursue but not yet started
   Not planning to implement

9. Implementation of Artificial Intelligence in banking sector is important.
Strongly Agree   Agree   Neutral   Disagree
Strongly disagree

10. Man-hours were reduced after implementation of Artificial Intelligence in Bank
     Strongly Agree   Agree   Neutral   Disagree
     Strongly disagree

11. AI helps to provide transparency of data to the customer
Strongly Agree   Agree   Neutral   Disagree   Strongly disagree

12. Possible to get a real-time Client View, that combines internal and external data
Strongly Agree   Agree   Neutral   Disagree   Strongly disagree

13. There a significantly positive impact of AI on the performance of bank.
  Strongly Agree   Agree   Neutral   Disagree   Strongly disagree
14. AI is difficult to access, because it is technical.
Strongly Agree   Agree   Neutral   Disagree   Strongly disagree

15. Implementation of AI in Bank Sector changed the banking system.
Strongly Agree   Agree   Neutral   Disagree   Strongly disagree

16. Implementation of AI in Bank is expensive.

Strongly Agree   Agree   Neutral   Disagree   Strongly disagree
17. AI helps the Bank to reduce the fraud and error.
Strongly Agree   Agree   Neutral   Disagree   Strongly disagree

18. Implementation of AI in Banking Sector improves the Customer Satisfaction.
Strongly Agree   Agree   Neutral   Disagree   Strongly disagree

19. AI helps the Bank to survive and success in the competitive environment.
Strongly Agree   Agree   Neutral   Disagree   Strongly disagree

Assessing the impact of digitalization on Micro, Small and Medium Enterprizes in India

Article · September 2022

CITATION	READS
1	116

4 authors:

Spulbar Cristi
University of Craiova
211 PUBLICATIONS   **1,484** CITATIONS

Ramona Birau
University of Craiova
231 PUBLICATIONS   **1,408** CITATIONS

Sharan KUMAR Shetty
MANEL SRINIVAS NAYAK INSTITUTE OF MANAGEMENT
10 PUBLICATIONS   **8** CITATIONS

Petre Ninulescu
University of Craiova
22 PUBLICATIONS   **9** CITATIONS

Assessing the impact of digitalization on Micro, Small and Medium Enterprizes in India

Sharan Kumar Shetty[1], Cristi Spulbar[2], Ramona Birau[3], Petre Valeriu Ninulescu[4]

Abstract: India is the fastest developing economy in the world. The Indian economy is the seventh biggest economy in the world in terms of GDP and the third biggest by purchasing power parity after the US and China. The Indian economy has seen a lot of changes from acting self-dependent to opening its entryway for worldwide exchanging by introducing Liberalization, Privatization, and Globalization in 1991 under the Finance Minister Mr. Manmohan Singh. And from that point in time, India is growing at a great pace. Economic Survey 2015-16, the Indian economy will keep on growing more than 7%in 2016-17 and gradually increase to 8% by FY 2018-19, driven by the gradual usage of changes in the economy, higher disposable income, and change in financial action. The current strides of the Indian government have indicated positive outcomes in the growth of the GDP. In India, most of the transactions are in cash nearly 90% of the stores in the market are accepting money. Micro and small-scale enterprises not only contribute significantly to improved living standards, but they also bring about substantial local capital formation and achieve high levels of productivity and capability. In this situation, this research study takes the initiation to analyze the impact of digitalization on MSMEs as they are one of the major players in the economic development of industrial areas like Karnataka.

Keywords: *MSME, Banking system, Financial Institutions, Micro Finance, Digitization, Bank Loans.*

---

[1] Manel Srinivas Nayak Institute of Management, Mangaluru, India, Email: sharansai25@gmail.com.
[2] Department of Finance, Banking and Economic Analysis, Faculty of Economics and Business Administration, University of Craiova, Craiova, Romania, Email: cristi_spulbar@yahoo.com.
[3] University of Craiova, Doctoral School of Economic Sciences, Craiova, Romania, Email: ramona.f.birau@gmail.com.
[4] Faculty of Economics and Business Administration, University of Craiova, Romania, Email: petre.pregi@yahoo.it.

1. Introduction

These enterprises play a vital role in the economic growth of the country. Besides this, because of digitalization MSMEs sector facing a lot of problems relating to borrowing money from financial institutions and banks, there are still many small and medium scale enterprises that are unaware of the impact of digital transformation and fail to build customer loyalty. While the implementation of GST did not appear to have a substantial influence on overall credit to Micro, Small and Medium Enterprises, the demonetization of currency caused the already sluggish credit growth of the Micro, Small and Medium Enterprises sector to slow even further.

The Prime Minister of India, launched the so – called "Digital India" campaign on July 1, 2015, with the main goal of ensuring that citizens have access to government services online through improved online infrastructure, increased internet connectivity, or by giving the nation digital empowerment in the technology sector. Plans for connecting rural areas to high-speed internet networks are part of the effort. The goal of the Digital India programme is inclusive growth in the production of electronic goods, services, and employment possibilities. The creation of a safe and reliable digital infrastructure, the provision of public services online, and widespread digital literacy make up the three main elements of the "Digital India" initiative.

Digital infrastructure basically refers to platforms where country residents will be able to create a digital identity that will enable them to quickly access government services. Nearly all services, including managing a bank account, distance learning, registering for numerous government websites, digitally preserving papers, etc., are made available online as part of this project. All of the country's rural areas will soon have access to high-speed internet as part of the project. They will be able to benefit from the government's numerous projects thanks to this.

The Indian economy's skeleton is made up primarily of Micro Small and Medium Enterprize companies. In accordance with the Micro, Small, and Medium Enterprises Development Act of 2006, the Indian government has established MSME. Production, manufacture, processing, or preservation of goods and commodities was the main focus of these businesses. MSMEs represents one of the most significant segment of the Indian economy and have made significant contributions to the socio-economic advancement and development of the nation.

Due to its exports and contribution to India's Gross Domestic Product (GDP), the sector has grown significantly in prominence. Along with creating job possibilities, it also contributes to the advancement of the nation's rural and underdeveloped regions. The Micro, Small, and Medium Enterprises development are divided into two classes, namely Manufacturing Enterprises and Service Enterprises, in accordance with their regulations. The businesses are further divided into groups according to equipment investments and annual turnover.

The research objectives of this empirical study are the following:
1) To review thecurrent digitalization practice in MSMEs.
2) To assess the challenges of MSMEs in digitalization system.
3) To establish possible solutions in minimizing problems faced in implementing digitalization.

2. Literature review

Because of external environmental changes along with changing social, economic, cultural, and political changes occurred in the country. Most research

scholars, experts, and Marketing, finance, Human resources, external factors, etc. It is known that SME's facing more challenges are like surveillance problems because of changing external environment structure.

Neely et al. (1995) argued that performance measurement can be defined as a metric, process, and set of metrics based on their efficiency and effectiveness of actions. For any organization's performance, indicators are crucial for knowing the status of the organization and for developing a strategy towards increasing their performance in the coming future. This study identifies four metrics for calculating the performance of an organization as quality, time, flexibility, and cost. facilities, technology up-gradation, inadequate infrastructure, poor transportation facilities.

Stockdale and Standing (2004) studied the advantages and obstacles in the adoption of electronic marketplace by SMEs and stated that access to a broader range of markets is a critical factor in the adoption of Internet technology. They also concluded that the changing requirements of customers, as well as suppliers, also shape the adoption of IT technology by small firms. The authors consider E-marketplace as a considerable threat on the development of the Micro, Small, and Medium Enterprises because generates high competition and maintains non-participants in an area of vulnerability and exposure for the other firms which are more e-enabled. Scupola (2004) investigated the implementation of E-Commerce in the case of Small and Medium Size Enterprises in Australia based on the following factors: environmental, organizational and technological.

Pearce-Moses (2005) provided an interesting definition of digitization which is "the process of transforming analog material into binary electronic (digital) form, especially for storage and use in a computer". Moreover, digitalization converts materials from analog formats that can be read by people to a digital format that can be read-only by machines. The devices like scanners, cameras, and several other devices can be used to digitize knowledge contents. These technologies allow the digitalization of almost all types of materials, including paper documents, rare documents, photographs, sound recordings, and motion pictures.

Khan et al. (2015) examined the effects of digitization on economy but also the importance of ICTs such as Information and Communication Technologies. On the other hand, Hawaldar et al. (2020) analyzed the impact of non-performing assets in the case of agricultural loans considering that agriculture is one of the main economic sectors in India. Pourmansouri et al. (2022) argued that in order to determine corporate governance in firms or companies a key role is played by increasing levels regarding performance and value for shareholders.

3. Research methodology

The research framework represents the methodical process of gathering and analysing facts in order to improve our comprehension of the issue that interests or concerns us. This research study is quantitative and exploratory in nature, with data gathered from both primary and secondary sources.

Source of data:

a) **Primary data:**

Primary data is collected through a semi structured questionnaire from executives, supervisors or the proprietor of the MSME companies. The questionnaire was distributed randomly to 100 companies in Udupi and Mangaluru District. 50% of the questionnaires

was distributed in Mangaluru Industrial area where majority of the MSMEs are located and in remaining 50% of the questionnaire was distributed in Udupi District.

b) Secondary Data:
Secondary data are collected from the various published and unpublished sources like annual report of MSMEs, journals, articles, newspaper reports etc.

4. Empirical results

USE OF CHI-SQUARE TEST:
The chi-square (x^2) is a measure of the relative discrepancy between the observed and the expected frequencies. It is used to test the independence of two attributes.
Formula:

$$\chi^2 = \sum (O_i - E_{id})^2 / E_{id}.$$

Whereon is the observed value and E_{id} being the expected value.

Table No: 1.1
H_o : Gender and training program are independent
H_1 : Gender and training program are dependent

Table 1 : <u>Gender and Training program cross tabulation</u>

| | | | Undergone any training to start a Business | | |
			Yes	No	Total
Gender	Male	Count	4	91	95
		% within Gender	4.2%	95.8%	100.0%
		% within Undergone any training to start a Business	66.7%	96.8%	95.0%
	Female	Count	2	3	5
		% within Gender	40.0%	60.0%	100.0%
		% within Undergone any training to start a Business	33.3%	3.2%	5.0%
Total		Count	6	94	100
		% within Gender	6.0%	94.0%	100.0%
		% within Undergone any training to start a Business	100.0%	100.0%	100.0%

Assessing the impact of digitalization on Micro, Small and Medium Enterprizes in India

Table 2: Chi-Square Tests

	Value	Df	Asp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	**10.788[a]**	**1**	**.001**		
Continuity Correction	5.375	1	.020		
Likelihood Ratio	5.494	1	.019		
Fisher's Exact Test				.028	.028
Linear-by-Linear Association	10.680	1	.001		
N of Valid Cases	100				

Source: Data collected from Primary Data through Questionnaire Method with the help of SPSS tool.

Interpretation:

The chi square statistics appears in the value column immediately to the right of "**Pearson Chi-square**". In this example, the value of the chi square statistic is **10.788**

The p-value (0.001) appears in the same row in the **"Asymptotic Significance (2 sided)"** column. The result is significant if this value is equal to or less than the designated alpha level (i.e. 0.05).

In this case, the p- value is smaller than the standard alpha value, so we would reject the null hypothesis

Chi-Square value lies in rejection region therefore reject the null hypothesis

There for, **Gender and Training programs are dependent**

H_0 : **Age group and the size of the business is independent**
H_1 : **Age group and the size of the business is dependent**

Table 3 :   Age Group * Size of the Business Cross tabulation

			Size of the Business			
			Micro :Investment< Rs. 1crore and Turnover<Rs. 5 crores	Small : Investment<Rs . 10 crores and Turnover<Rs. 50 crores	Medium: Investment<Rs. 50 crores and Turnover<Rs.250 crores	Total
Age Group	21-30	Count	30	0	0	30
		% within Age Group	100.0%	.0%	.0%	100.0%
		% within Size of the Business	30.6%	.0%	.0%	30.0%
	31-40	Count	43	1	0	44
		% within Age Group	97.7%	2.3%	.0%	100.0%
		% within Size of the Business	43.9%	100.0%	.0%	44.0%

41-50	Count	14	0	0	14
	% within Age Group	100.0%	.0%	.0%	100.0%
	% within Size of the Business	14.3%	.0%	.0%	14.0%
More than 50	Count	11	0	1	12
	% within Age Group	91.7%	.0%	8.3%	100.0%
	% within Size of the Business	11.2%	.0%	100.0%	12.0%
Total	Count	98	1	1	100
	% within Age Group	98.0%	1.0%	1.0%	100.0%
	% within Size of the Business	100.0%	100.0%	100.0%	100.0%

Table 4 : Chi-Square Tests

	Value	df	Asp. Sig. (2-sided)
Pearson Chi-Square	**8.673[a]**	**6**	**.193**
Likelihood Ratio	5.951	6	.429
Linear-by-Linear Association	3.120	1	.077
N of Valid Cases	100		

Source: Data collected from Primary Data through Questionnaire Method with help the of SPSS tool.

Interpretation:

The chi square statistics appears in the value column immediately to the right of "**Pearson chi-square** ". In this example, the value of the chi square statistic is **8.673.**

The p-value (0.193) appears in the same row in the **"Asymptotic Significance (2 sided)"** column. The result is significant if this value is equal to or less than the designated alpha level (i.e. 0.05).

In this case, the p- value is greater than the standard alpha value, so we would accept the null hypothesis

Chi-Square value lies in acceptance region, therefore accept the null hypothesis

There for, **Gender and size of the business are independent.** A statistical technique called simple linear regression enables us to examine and analyse relationships between two continuous variables.

Formula:

$Y = \beta_0 + \beta_1 X + \varepsilon$

Predictor: Age group

Dependent variable: How much impact on profit after using digitalization

Assessing the impact of digitalization on Micro, Small and Medium Enterprizes in India

Table 5 : Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.178[a]	.032	.022	.22028

Table 6 : ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.155	1	.155	3.189	.077[a]
	Residual	4.755	98	.049		
	Total	4.910	99			

Table 7 : Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.944	.053		17.902	.000
	Age Group	.041	.023	.178	1.786	.077

Source: Data collected from Primary Data through Questionnaire Method with the help of SPSS tool.

Interpretation:
In this model Sig (p-value) is more than alpha (0.05), we say that this model is not significant.
(F= 3.189, p = 0.077)

Predictor: Size of the business
Dependent variable: How much impact on profit after using digitalization

Table 8 : Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate

Table 9 : ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	2.466	1	2.466	2.032	.157a
Residual	118.974	98	1.214		
Total	121.44	99			

Table 10 : Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.110	.524		4.028	.000
Size of the Business	.709	.497	.143	1.425	.157

Source: Data collected from Primary Data through Questionnaire Method with the help of SPSS tool.

1	.143ᵃ	.020	.010	1.10182

USE OF T- TEST:

To evaluate whether there is a significant difference between the means of two groups that may be related in some ways, a t test is a sort of inferential statistic that is utilised. The t-test is one of many tests used in statistical hypothesis testing.

Formula:
$$t = \frac{m - \mu}{s/\sqrt{n}}$$
 Where,
t = Student's t-test
m = mean
μ = theoretical value
s = standard deviation
n= variable set size
Table No: 1.5
H_0 : There is no significant differences between gender and age group
H_1 : There is a significant difference between gender and age group

Assessing the impact of digitalization on Micro, Small and Medium Enterprizes in India

Table 11 : Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Age Group	Male	95	2.1368	.95216	.09769
	Female	5	1.0000	.00000	.00000

Table 12: Independent Samples Test

		Levine's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Age Group	Equal variances assumed	6.938	.010	2.657	98	.009	1.13684	.42787	.28774	1.98594
	Equal variances not assumed			11.637	94.000	.000	1.13684	.09769	.94288	1.33081

Source: Data collected from Primary Data through Questionnaire Method with the help of SPSS tool.

Interpretation:
In this model significant value is 0.010 it is less than 0.05 so this model is significant. Here significant value is in acceptance region there for accept the null hypothesis.
So, there is a no significant difference between gender and age group
H_0 **: There is no significant difference between gender and Ease of accepting payment from customers**
H_1 **: There is a significant difference between gender and Ease of accepting payment from customers**

Table 13 : Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Ease in accepting payments from customers	Male	95	7.4947	1.17486	.12054
	Female	5	7.2000	2.28035	1.01980

Table 14 : Independent Samples Test

		Levine's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Ease in accepting payments from customer	Equal variances assumed	7.262	.008	.518	98	.605	.29474	.56869	-.83381	1.42329
	Equal variances not assumed			.287	4.113	.788	.29474	1.02690	-2.52590	3.11538

Source: Data collected from Primary Data through Questionnaire Method with the help of SPSS tool.

Interpretation:
In this model significant value is 0.008 it is less than 0.05 so this model is significant. Here significant value is in acceptance region there for accept the null hypothesis and reject the alternative hypothesis.

So, there is a no significant difference between gender and Ease of accepting payment from customers.

4. Discussions

The main focus of this study was to assess the current practices of digitalization of MSMEs, understand the problems faced by MSMEs in Post digitalization and support MSMEs in minimizing problems faced in implementing digitalization. The study is structured of five chapters namely, Introduction, Literature review, Research methodology, Data analysis and interpretation and last one is Summary and Conclusion.

Majority of respondents feel great to have digitalization while accepting payments from customers, payments to suppliers, saves time from the long queue either at banks or ATMs for the purpose of withdrawing or depositing cash. Majority of respondents feel their profit increased by 0 to 10% after using digitalization techniques in the business. With the use of chi- square test for example No 1, we found p-value as 0.001 is less than standard alpha level (0.05) there for reject the null hypothesis, So Gender and Training programs are dependent. With the use of chi- square test for example No 2, we found p-value as 0.193 is more than standard alpha level (0.05) there for accept the null hypothesis, So Gender and size of the business are independent. With the use of simple linear regression for both the example we got p-value as more than alpha value so we conclude that these models are not significant. With the use of t-test we got significant value as less than alpha value so we accept the null hypothesis for both the example.

A clear road map of spectrum availability with a rational pricing structure needs to be developed Taxes and levies on telecom services should be rationalized to ensure overall growth and financial viability of the sector Clear rules relating to security standards should be set to help reduce uncertainty for equipment providers, and service providers. Address security and governance issue of internet If hospitals are part of the network providing medical advice through telemedicine, quality healthcare can reach people living in remote areas for which Digital India can come in handy. Hence, Government should plan to use Digital India initiative effectively improving Medicare. Another area of focus for Google as a part of supporting the Digital India initiative is to build the non-English internet user base. Hence, along with English, Indian languages to build non-English internet so that internet becomes very helpful. Communicating frequently via traditional and digital methods.

Men made up the majority of the responders. The bulk of the people who took part in the survey were between the ages of 31 and 40. The bulk of those who responded were high school graduated. The vast majority of people who took part in the survey were married. The food Centre industry employs the bulk of the respondents. The majority of those polled had had no government-sponsored training. The great majority of people surveyed are self-employed. Micro businesses employ the vast majority of responders. The bulk of those who responded had between one and five years of experience. The majority of respondents believe that having digitization while receiving payments from clients, payments to suppliers, and saving time from long lines at banks

or ATMs for withdrawing or depositing money is a fantastic thing. After implementing digitalization strategies in their business, the majority of respondents believe their profits have increased by 0 to 10%.

Using the chi-square test, we discovered that the p-value of 0.001 is less than the standard alpha level (0.05) required rejecting the null hypothesis, indicating that gender and training programs are interdependent. For example, No. 2, the chi-square test revealed that the p-value of 0.193 is more than the typical alpha level (0.05), indicating that the null hypothesis is correct. We observed that the p-value was bigger than the alpha value for both examples using simple linear regression, indicating that these models are not significant. We observed that the significant value was less than the alpha value using the t-test, therefore in both situations, we accept the null hypothesis.

It is necessary to define a clear roadmap for spectrum availability, as well as a fair pricing system. Taxes and levies on telecom services should be streamlined to enable the sector's overall growth and financial viability. Clear security standards guidelines should be set to assist avoid ambiguity for equipment and service suppliers. The internet has become incredibly beneficial as a result of this. Quality healthcare can reach people living in rural locations if hospitals are part of a network giving medical advice via telemedicine, which is where Digital India can help. As a result, the government should make plans to use the Digital India project to improve Medicare in a meaningful way. Collaboration between state and federal authorities is essential; else, service prices and maintenance would grow. As part of its support for the Digital India initiative, Google is focusing on expanding its non-English internet user base. As a result, in addition to English, Indian languages contributed to the development of the non-English internet, making it immensely helpful. Allowing people to work in new ways. Giving everyday objects a digital makeover. Using both traditional and digital communication methods on a regular basis.

5. Conclusions

A digital environment for the working of MSME sector has been created by the government through various policy initiatives. Overview of the schemes and policies tells that it is only around four to five years back when the process of gearing up of digitalization of MSMEs have started, although the pace was slow but now it is gaining momentum. Digitalization is a significant factor to take an enterprise a level up, MSMEs are upgrading their ways of doing business but remains weak due to use of unsophisticated technology. The entrepreneurs mostly do not have all the required skills, knowledge and resources to adopt these technologies thus it becomes the responsibility of the government to provide a helping hand for making advancement.

The government has developed a digital environment for the MSME sector's functioning through numerous policy initiatives. The assessment of plans and policies reveals that the process of preparing MSMEs for digitalization began only four to five years ago, and while the pace was slow at first, it is already picking up. MSMEs are updating their business operations, yet they are still vulnerable owing to obsolete technology. Because most entrepreneurs lack the essential skills, expertise, and money to implement new technologies, it is the government's job to assist them.

Adoption of digital technology solves many of the problems that businesses face and aids in their growth and expansion, making it a boon to some entrepreneurs. However, due to ignorance and a lack of e-literacy, some entrepreneurs are still unaware of the benefits and importance of digital technology. As a result, e-literacy initiatives

must be implemented to create awareness about the potential and relevance of digital technology for corporate success, and they must reach the grassroots level. Maintaining the competitiveness of domestic firms in relation to global firms is a prerequisite of the existing system and one of the government's primary concerns, which may be accomplished efficiently through the digitization of the MSME sector. Emerging digital technologies are making it easier for businesses to manage their operations and provide better service to their customers. Adoption of these technologies is critical for developing timely financial insights and remaining competitive. Businesses that are still operating today must embrace digital transformation in order to restructure and, ultimately, recover when non-digital endeavours become obsolete in the new normal.

Authors' Contributions:
The authors contributed equally to this work.

References:
Hawaldar, I.T., Spulbar, C., Lokesha, Birau, R., Rebegea, C. (2020). Analyzing non-performing assets in agricultural loans: A case study of India, *Revista de Ştiinţe Politice. Revue des Sciences Politiques,* No. 65, pg.42-53.

Khan, S., Khan, S., Aftab, M. (2015). Digitization and its impact on economy, *International Journal of Digital Library Services, Geetanjali Research Publication*, 5(2), 138–149, ISSN:2250-1142 (Online), ISSN 2349-302X (Print), http://www.ijodls.in/uploads/3/6/0/3/3603729/vol-5,_issue-2.138-149.pdf.

Neely, A., Gregory, M., Platts, K. (1995). Performance measurement system design: A literature review and research agenda, *International Journal of Operations & Production Management*, Vol. 15 Iss: 4, pp. 80 - 116.

Pearce-Moses, R. (2005). Digitization. In A glossary of archival and records terminology, *The Society of American Archivists*, ISBN 1-931666-14-8, 463 pp., https://files. archivists.org/pubs/free/SAA-Glossary-2005.pdf.

Pourmansouri, R., Mehdiabadi, A., Shahabi, V., Spulbar, C., Birau, R. (2022). An Investigation of the Link between Major Shareholders' Behavior and Corporate Governance Performance before and after the COVID-19 Pandemic: A Case Study of the Companies Listed on the Iranian Stock Market. *Journal of Risk and Financial Management*, 15(5), 208, https://doi.org/10.3390/jrfm15050208.

Scupola, A. (2004). Adoption of E-Commerce in Small and Medium Size Enterprises in Australia", AMCIS 2004 Proceedings, *Americas Conference on Information Systems (AMCIS) at AIS Electronic Library (AISeL)*, 49, http://aisel.aisnet.org/amcis2004/49, https://core.ac.uk/download/pdf/301346506.pdf.

Stockdale, R., Standing, C. (2004). Benefits and barriers of electronic marketplace participation: an SME perspective, *Journal of Enterprise Information Management*, 17(4), 301-311. https://doi.org/10.1108/17410390410548715 .

Assessing the impact of digitalization on Micro, Small and Medium Enterprizes in India

APPENDIX
QUESTIONNAIRE

<u>PART – A</u>

1. Name of the Business or Businessman : ------------------------------------

2. Gender: a) Male   b) Female

3. Educational Qualification:
    a) High school   b) Graduation   c) Post - Graduation   d) Professional or PhD

4. To What age group do you belong to?
    a) 21-30   b) 31-40   c) 41-50   d) More than 50

5. Marital Status:
    a) Single   b) Married

6. Nature of the business (mark only one)
    a) Food / cosmetics
    b) Jewelry
    c) Food Centers (including hotels)
    d) Books and stationery
    e) Medications
    f) Clothes / Shoes
    g) Furniture
    h) Technology
    i) Provide any kind of services
    j) Other:

7. Are you undergone any training to start your business:
       a) Yes   b) No
       If yes, name the training you got ……………………………………..

8. Legal status:
    a) Sole proprietorship
    b) Partnership
    c) Company

9. Size of the Business (Mark any one)
    a) Micro
    b) Small
    c) Medium

10. Years of Operation:
    a) Less than 1 year
    b) 1-5 years
    c) 6-10 years
    d) More than 10 years

<u>PART- B</u>
How could you rate the following favorable factors of digitalization that are contributing the growth of your MSMEs business (where 10 means most beneficial and 1 means least beneficial)

1. Easily accept payments from customers:

	1	2	3	4	5	6	7	8	9	10	
Least Beneficial											Most Beneficial

2. Ease in making payments to Suppliers :

	1	2	3	4	5	6	7	8	9	10	
Least Beneficial											Most Beneficial

3. Ease of applying and approval of loans or overdraft from the banks / Financial institutions:

	1	2	3	4	5	6	7	8	9	10	
Least Beneficial											Most Beneficial

4. Ease in managing the expenditure of business:

	1	2	3	4	5	6	7	8	9	10	
Least Beneficial											Most Beneficial

5. Save time from long queues at banks or ATMs for withdrawals or deposits:

	1	2	3	4	5	6	7	8	9	10	
Least Beneficial											Most Beneficial

6. To avoid carrying heavy cash while traveling for business purposes:

	1	2	3	4	5	6	7	8	9	10	
Least Beneficial											Most Beneficial

7. No misuse of funds by employees or reduction of theft:

	1	2	3	4	5	6	7	8	9	10	
Least Beneficial											Most Beneficial

8. Benefit of Cash Back :

	1	2	3	4	5	6	7	8	9	10	
Least Beneficial											Most Beneficial

9. How The Impact of Profit After Using Digital Processing:
    o No effect
    o Profit increases by 0 to 10%
    o Profit increased by 10% to 20%
    o Profit increased by 20% to 30%
    o Profit increased by 30% to 40%
    o Profit increased by 40% to 50%
    o Profit increased by 50% to 60%
    o Profit increased by 60% to 70%
    o Profit increased by 70% to 80%
    o Profit increased by 80% to 90%
    o Profit increases above 90%

Investigating the impact of Goods and Service Tax (GST) on the banking sector with reference to selected banks in India

Article · September 2022

4 authors:

Spulbar Cristi
University of Craiova
211 PUBLICATIONS **1,484** CITATIONS

SEE PROFILE

Ramona Birau
University of Craiova
231 PUBLICATIONS **1,408** CITATIONS

SEE PROFILE

Sharan KUMAR Shetty
MANEL SRINIVAS NAYAK INSTITUTE OF MANAGEMENT
10 PUBLICATIONS **8** CITATIONS

SEE PROFILE

Petre Ninulescu
University of Craiova
22 PUBLICATIONS **9** CITATIONS

SEE PROFILE

Investigating the impact of Goods and Service Tax (GST) on the banking sector with reference to selected banks in India

Sharan Kumar Shetty[1], Cristi Spulbar[2], Ramona Birau[3], Petre Valeriu Ninulescu[4]

Abstract:
The banking sector is one of the main sectors of our economy and generates huge revenue income. India is a nation with impressively splendid banks with ample resources and rules and regulations that are well-regulated. GST, i.e. Goods and Service Tax, a new tax regime launched at midnight on 1 July 2017, is one of the biggest transformations faced by the industry during this time. GST is a replacement to the VAT system. Tax rate on banking services have been increased in the present system. This study seeks to understand the problems faced by the banking sector and their impact on customers following the introduction of the GST. By abolishing the centralized registration of banks, the new tax regime has taken an unprecedented measure. All bank branches now have to register for smooth functioning in each state under GST. This research study emphases on the challenges faced by the banking sector on the introduction of GST and the implications for improving the rules, wherever required. This study helps the effect of GST on the banking sector to be understood by detailing the problems and advantages of GST. The perception of banking employees on the GST impact on the banking is undertaken through questionnaire. Areas of improvements which can be made in the GST sector are analysed.

Keywords: *Goods and Service Tax (GST), Value Added Tax (VAT), banking sector, perception, bank employees.*

[1]   Manel Srinivas Nayak Institute of Management, Mangaluru, India, Email: sharansai25@gmail.com.
[2] Department of Finance, Banking and Economic Analysis, Faculty of Economics and Business Administration, University of Craiova, Craiova, Romania, Email: cristi_spulbar@yahoo.com.
[3] University of Craiova, Doctoral School of Economic Sciences, Craiova, Romania, Email: ramona.f.birau@gmail.com.
[4] Faculty of Economics and Business Administration, University of Craiova, Romania, petre.pregi@yahoo.it.

Introduction

Indirect taxes can be defined tax levied on goods and services. Indirect taxes are not charged on profits India's history of indirect taxation goes back a few centuries, and we get some proof of the same in Kausalya's Arthashastra. Taxes were obtained during those days in the form of crops and agricultural products. For instance, Kumar et al. (2021) suggested that India represents the second largest consumer, but at the same time the fourth largest producer of natural rubber in the world considering the importance of agricultural sector. Hawaldar et al. (2020) investigated non-performing assets in the case of Indian agricultural loans. According to Manu Smriti, the king was expected to plan tax collection in such a way that the taxpayer did not feel the pinch of paying taxes. According to his decree, artisans and traders were required to pay 1/5th of their profits in silver and gold, while farmers were required to pay 1/6th, 1/8th, and 1/10th of their harvest depending on their individual circumstances.

In the Arthashastra, Kautilya mentions "Koshamoolodanda" and remarks that the treasury and its inflows are the origins of the might of a nation. Later, in 1922, the British revised the indirect tax collection scheme in India. (VAT in India – Past, Present and Future n.d.). With the introduction of excise duties, the modern history of indirect taxation started. In 1944, the Central Excise Act was drawn up and progressively updated until 1969, from year to year. More recently, the launch of VAT took place in 1986. The main goal was to allow producers to be reimbursed for excise duties paid on goods. Initially confined to raw materials and components, the scope of MODVAT was subsequently extended to include capital goods in 1994. In 2005 VAT was introduced in 21 states replacing all local taxes. The VAT system has different rules in different states of India.

The Concepts of GST are very important in order to understand the main objective of this research study. GST is value added tax levied on manufacture, sale and consumption of goods and services. GST is charged at each and every stage of the supply chain until it reaches the consumer. The supplier can avail credit of GST paid on purchase of goods/services and can set off this credit against the GST payable on supply of goods and services to be made by him.

CGST/SGST/UTGST/IGST

With some exclusions, all transactions involving the supply of goods or services for consideration are subject to the destination-based GST tax. GST includes:

➢ State Goods and Services Tax (SGST): levied and collected by State government; Union Territory Goods and Service Tax: imposed and collected by Union Territories without Legislature; Central Goods and Service Tax (CGST): levied and collected by Central governmentThe Integrated Goods and Services Tax is applied to interstate supplies of goods and services (IGST). All interstate purchases are subject to IGST, which is made up of CGST, SGST, and UTGST.

Investigating the impact of Goods and Service Tax (GST) on the banking sector with reference to selected banks in India
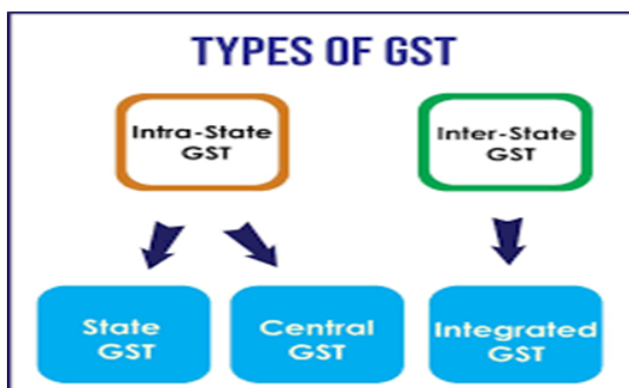

Figure 1: Types of Goods and Service Tax

Objectives:
➢ To review the perception of GST by the bankers
➢ To study the impact of GST and VAT on banking sector
➢ To compare man power requirements for GST implementation
➢ To identify the challenges faced by the banks in the implementation of GST

Problem Statement

There has been a drastic change in banking sector with the implementation of advanced technology. It is also felt that the taxation system places an important role in the banking domain. Indian banks have been following VAT over the years but in 2017 GST has come into existence. The bankers have undergone various challenges in implementing the GST system as it has got extra documentation and extra returns to be filled. This study makes an attempt to understand banker's perception and how to come out of the challenges in GST system

2. Literature Review

This study reveals the changes that are required to be made in banking sector after implementation of goods and services tax. Certain issues, difficulties, and benefits to banking industry due to the GST system are also explained. IT systems will need to be more vigilant in terms of serving the purpose of solving the complexity related to GST compliance and procedures at a higher volume (Meena, 2018). Moreover, Kaur et al. (2018) explained structure of GST and gap between previous indirect taxes and current one GST. This study will also help us to examine the opportunities and challenges which are linked to banking sector after implementation of GST. Therefore, the prospect of a collective gain for business, trade, agriculture, and regular consumers as well as for the federal government and state governments may be brought on by the introduction of the GST.

In another research work, the author analyses the proposed GST frame work and Current Taxation System. The proposed GST framework and current Taxation System were identified and compared and then its impact on various Sectors was described. The study also analysed the differences between present regime (VAT) with GST regime. For instance, Government authorities in India divide taxes into two major categories, such as: direct taxes and indirect taxes

(Swadia, 2016). Singh (2017) argued that considering the current credit delivery system, certain major categories are identified, namely: a) Commercial Banks, b) Regional Rural Banks also known as RRBs, c) Short term co-operative credit institutions and d) Long term cooperative credit organisations.

Kumar and Rafee (2017) suggested that the GST applies to all services wherein there is a supply of services for consideration. So, in banking transactions such as credit card payments, fund transfer, ATM transactions, processing fees on loans etc., where the banks are levying charges, increased tax rates would apply. This would have a slight inflationary impact. Also, interest on loans, trading in securities, foreign currency and retail services will also fall within the ambit of GST. On the other hand, Spulbar and Birau (2019) highlighted the impact of cybercrime effects on the banking sector for the sample cluster of countries from ASEAN, considering key aspects such as cyber-criminal activity, cyber security and banking management.

The need for this research study is motivated below. In this research paper, we are going to study the impact of GST on the banking industry both the public sector and private sector banks. For this purpose, we have selected banks like State Bank of India, Bank of Baroda, Union Bank of India and private sector banks like ICICI bank, HDFC banks and Axis banks. The gaps of the GST system when compared with the old system are analysed.

3. Research methodology

For this study, primary data have been collected in the form of questionnaire which was given to branches of above-mentioned banks in Mangalore city from India. There were 55 respondents in total.

Secondary data have been collected through various published reports, journals and other websites containing various information on impact of GST on banking sector.

Data analysis tools and techniques: The data has been analysed using MS office Excel Target Representation for study: Employees of the above-mentioned banks.

Sample Area of Study: Mangalore, India

Data Presentation: The data has been presented with the help of pie chart, bar diagram and other charts

Statistical Tools: Statistical tools such as descriptive statistics, graphical presentation, chi square tests, T tests and ANOVA have been used for the analysis.

4. Empirical analysis and results

Primary data was used to analyse bank employees' understanding of GST through ashort survey. The questionnaire was prepared using Google Forms and distributed to various branches of above-mentioned banks. The data collected have been interpreted in the form of bar graphs, pie charts and other plots. The respondents are classified based on the experience level. People with high experience level have a better knowledge as they have worked in both the GST and VAT systems.

This survey therefore, helps us gain an insight on preferred taxation system in India from the banker's point of view. Out of the 55 respondents, 34 of them were from private banks. The rest of them were from Public sector banks as

depicted in table 1. The respondents include beginners with less than 1 year of experience as well as professionals with more than 20 years of service.

Table 1: Banks classified by its types

	Frequency	Percent	Valid Percent	Cumulative Percent
Private banks	34	61.8	61.8	61.8
Public sector banks	21	38.2	38.2	100.0
Total	55	100.0	100.0	

Based on the data collected from the bankers of 3 public and 3 private sector banks, it is found from figure 12, that GST is preferable than VAT system. All the respondents have favoured GST system over VAT system showing that GST has more advantages and is more convenient to the bank employees.
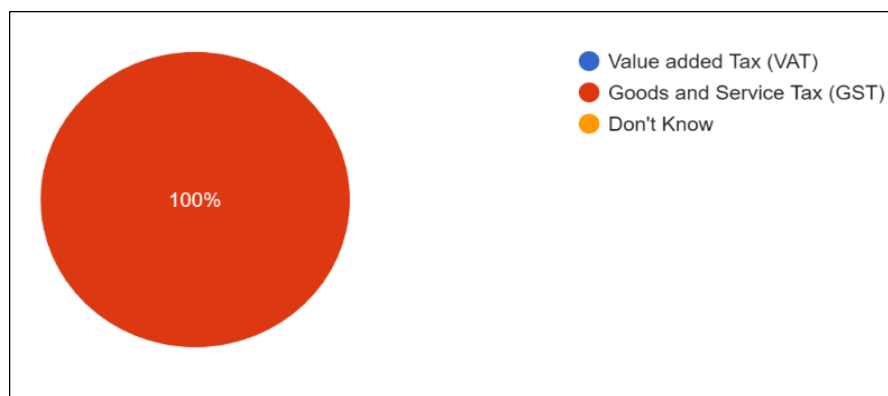
Figure 2: Preference of GST over VAT

Table 2: Preference of GST over VAT

		Responses		Percent of Cases
		N	Percent	
Why You Prefer GST?	**More transparent**	22	40.0%	53.7%
	Reduce double taxation effect	28	50.9%	68.3%
	GST improved bank services	5	9.1%	12.2%
Total		55	100.0%	134.1%
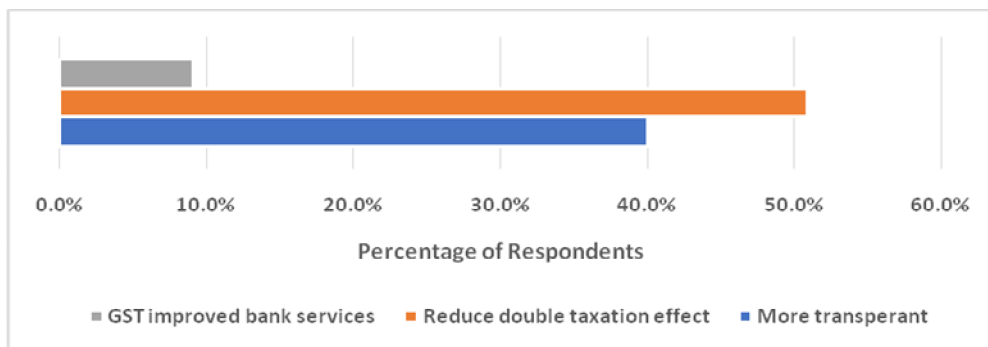
Figure 3: Impact of GST

The respondents were asked the reason why GST system was more effective than the VAT system. Majority of them were of the opinion that reduction of double taxation effect was the most important reason why GST was more preferred. Other mentioned reasons were that GST is a more transparent system and that GST has improved banking services.

The majority of respondents obviously like the GSTN portal. Every feature, including tax payer registration (new, surrender, cancel, change, etc.), invoice upload, buyer purchase information auto-drafting, GST returns filing on specified dates for each type of return, tax payment by creation of Challan and integration with Banks department, and electronic returns filing on specified dates for each type of return The site is simple to use and comprehend. The portal is really effectively and efficiently constructed.

Figure 4: Satisfaction with GSTN portal

It is evident from the figure 13 that only 31% of the respondents are fully satisfied with the GSTN portal. Rest of the respondents opined that the portal is good but there is scope for further improvements. Overall, the performance of portal is satisfactory. Next figure depicts the experience level (in years) of the respondents. Bank employees with high level of experience have worked under both VAT and GST taxation system. The GST system was favoured over the VAT system, by experienced bank employees. From this it can be inferred that GST is much better than VAT system.

Investigating the impact of Goods and Service Tax (GST) on the banking sector with reference to selected banks in India

Respondents were asked about the benefits of GST in their professional life. As far as improvements in banking services due to GST is considered, respondents were having varied opinions. 46% have agreed that banking services improved due to GST. With regard to increased profit due to GST, 38% of the respondents felt that GST increased banking profits whereas other 38% of respondents remained neutral.
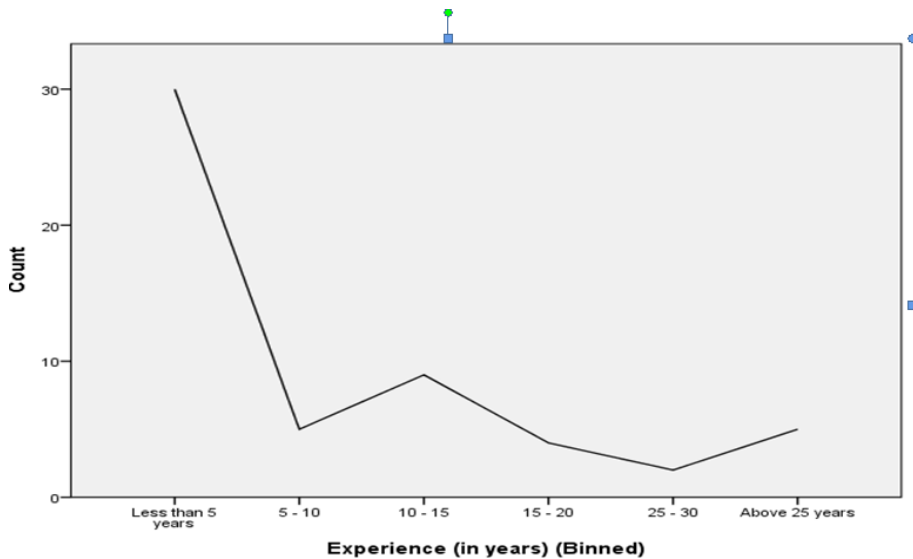
Figure 5: Experience of bank employees

Most of the respondents (54%) have agreed to the statement that GST implementation has made their job easier and also transition from VAT to GST system was smooth (62%). These results are visually presented in figure 5.

Chi – square test has been applied to check if there is an association between adequacy of manpower and type of banks. From the results given in table 4(test statistic = 19.433[a], p-value<0.01) it appears that private banks have less man-power problems. Since private sector banks pay less to the employees in comparison to public sector banks, they are able to employ more people. Public sector banks, on the other hand have more problems in working with GST. This shows that the public sector banks should employ more people in this regard. Efficient training has to be given to the bank employees in the field of GST. The figure 6 and table 3 also confirm the same.

Table 3: Manpower issues in public and private sector banks

		Lack of manpower			Total
		Severe Problem	Minor problem	Not a problem	
Type	Private banks	5	9	20	34
	Public sector banks	8	13	0	21
Total		13	22	20	55

Table 4: Chi- square test for manpower issues

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	19.433[a]	2	.000
Likelihood Ratio	26.054	2	.000
Linear-by-Linear Association	14.756	1	.000
N of Valid Cases	55		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is 4.96.
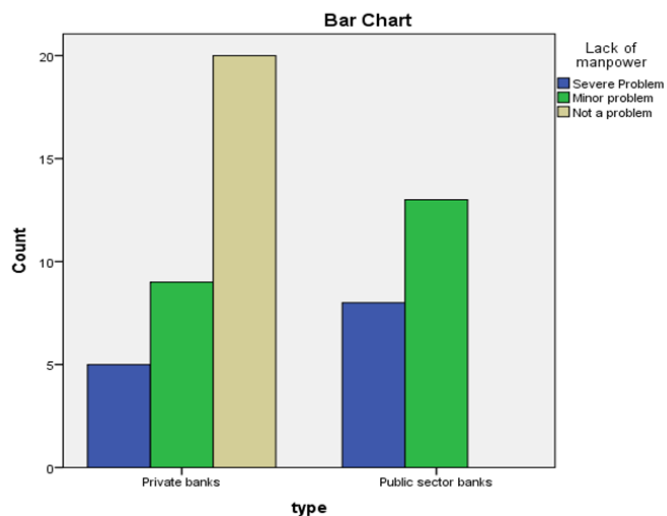
Figure 6: Manpower issues in public and private banks

Investigating the impact of Goods and Service Tax (GST) on the banking sector with reference to selected banks in India

Table 5: Documentation in Banks

		Severe Problem	Minor problem	Not a problem	
Type	Private banks	0	14	20	34
	Public sector banks	8	13	0	21
Total		8	27	20	55

Table 6 : Chi Square test of Documentation Process in Banks.

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	26.442[a]	2	.000
Likelihood Ratio	35.751	2	.000
Linear-by-Linear Association	25.943	1	.000
N of Valid Cases	55		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 3.05.
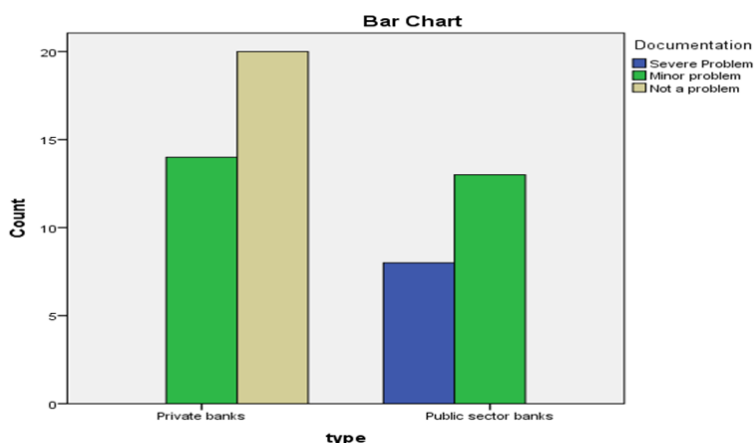
Figure 7: Documentation in banks

It is evident that majority of the respondents have agreed that documentation is tedious. GST has lots of documentation when compared with the previous VAT system. There are more than 25 returns in a year to be filled under the GST regime. It is highly time-consuming process. Also, from the Chi-Square tests (test statistic = 26.442[a], p-value<0.01) performed to find the dependency of documentation on type of bank, it was found as represented in table 5 and 6 that public sector banks face more difficulty in the GST documentation process. One of the possible reasons to explain this is that public sector banks have lesser manpower as already mentioned. Due to the increased manpower in the private banks, the documentation process becomes comparatively easier to handle. These results are also highlighted in figure 8.

Respondents in majority have opined that the GST levy on bank-to-bank transaction is a problem. In the earlier system there was no tax charged on banking transaction intra state. This made the banks to account for tax in each and every transaction. All these results are consolidated in figure 8.
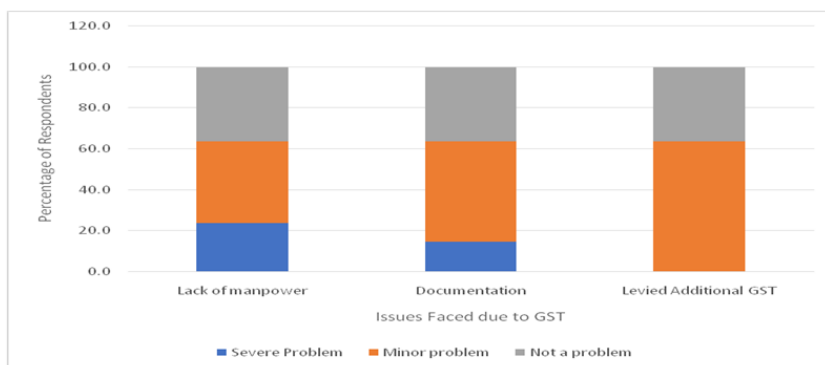
Figure 8: Issues faced in GST

Perception of Bank Employees towards GST implementation

To gather information on perception of bank employees towards GST implementation, they were asked to indicate their level of agreement using the scale (5- strongly agree to 1- strongly disagree) on the following four statements

1) Introduction of GST in India has improved the banking services
2) Introduction of GST has led to increase in bank profits
3) Implementation of GST has made your job easier
4) Transition of VAT to GST was smooth

By adding the scores on the four statements GST favourable score of each respondent was calculated. Using the following formula these scores were converted to range from 0 to 100.

$$\frac{(Score - 4)}{20 - 4} * 100$$

The descriptive statistics pertaining to GST favourable score of bank employees is given in

Table.7: Favourable Score of GST - Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
GST favourable score	55	18.75	100.00	60.6818	25.56290
Valid N (listwise)	55				

We observe that average GST favourable score of bank employees is 60.68 with a standard 25.26.

Comparison of GST favourable scores of employees of private and public sector banks

Descriptive GST favourable scores of employees of private and public and sector banks is given in the table

Investigating the impact of Goods and Service Tax (GST) on the banking sector with reference to selected banks in India

Table 8 : Group Statistics

	Type	N	Mean	Std. Deviation	Std. Error Mean
GST favourable score	**Private banks**	34	66.7279	29.90359	5.12842
	Public sector banks	21	50.8929	11.23014	2.45062

To test the significance of mean GST favourable score of public and private sector banks, independent samples 't' test was employed and the results are given in the table.

Table 9 : Independent Samples Test

		Levine's Test for Equality of Variances		t-test for Equality of Means						95% Confidence Interval of the Difference	
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference		Lower	Upper
GST favourable score	**Equal variances assumed**	30.875	.000	2.321	53	.024	15.83508	6.82314		2.14959	29.52058
	Equal variances not assumed			2.786	45.847	.008	15.83508	5.68386		4.39304	27.27713

The null hypothesis of equality of mean GST favourable scores of private and public sector banks was rejected and concluded that employees of private banks are more favourable towards the implementation of GST.

Experience level of bank employees and GST favourable scores

In this section, GST favourable scores of employees with varied experience levels are compared employing one way ANOVA. Employees were classified into three categories

1) Employees having less than 10 years of experience
2) Employees having 10 to 15 years of experience
3) Employees having more than 20 years of experience

Descriptive Statistics of GST favourable are given in table 10 as following:

Table 10 : GST favourable score

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Less than 10 years	35	13.2000	4.57487	.77329	11.6285	14.7715	7.00	20.00
Between 10 to 20 years	13	14.0000	3.31662	.91987	11.9958	16.0042	11.00	18.00
More than 20 years	7	15.7143	1.88982	.71429	13.9665	17.4621	15.00	20.00
Total	55	13.7091	4.09006	.55150	12.6034	14.8148	7.00	20.00

It appears that employees having more than 20 years of experience are more favourable towards the implementation of GST. However, analysis done using one way ANOVA revealed as such there is no significant difference in the mean GST favourable scores of employees belonging to different experience levels. Table 9 gives the results of one way ANOVA.

Table 11 GST favourable score - ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	38.317	2	19.158	1.152	.324
Within Groups	865.029	52	16.635		
Total	903.345	54			

5. Discussions

It is noted that all the chosen banks agree that GST is better than the VAT system. This research shows that bankers are still facing difficulties using the GST portal. Employees who served in both tax systems felt that GST was more trustworthy. GST was chosen by new hires because they have no job experience in the VAT system. The study shows that 50 percent of bankers have revealed that the banking system has been strengthened by implementing GST. It also shows that there is a lot of space for progress.

Most respondents are very confident that GST has improved the banking services and has made the transition to the GST system smooth. GST was found not to have improved in terms of the profitability of the banking sector. In order to support the financial sector, methods in GST law should be adopted. Manpower for the smooth functioning of GST is required. Banks must ensure that there is adequate workforce in each branch. Since there are several returns, each and every return is needed under the GST system documentation. Documentation preservation is hard. GST data reconciliation is a very difficult.

GST registration is required for each and every branch in the state which was not present in the earlier system. The banking services became costly by 3% after the introduction of GST. There is space for changes to make it more comfortable for workers on the GST portal. Employees need to be educated in this portal to increase their effectiveness. The banking authorities should look at

current banking services in order to comply with the standard criteria. To fill the void between GST and profitability, extensive research has to be done. The public sector needs to raise the number of workers in the GST feature management divisions.

The annual / monthly number of GST returns must be reduced. Software should be enhanced to promote reconciliation. In this regard, the old VAT rules must be applied in the GST system regarding the registration of banks under GST

6. Conclusions

In this study, an attempt has been made to analyse the impact of GST on the banking sector. It focuses on the benefits and limitations faced by the bank in the implementation of GST. From the analysis it was found that GST has not made a huge impact in increasing the profitability of the banking industry. This can be elucidated by the fact that the financial services provided by the banks became costly after GST implementation. The transactions between banks of same branches in two different states are taxed are under GST which was not followed in the VAT system. Moreover, the banks have to be registered under GST in each and every state they operate in. It was observed that a greater number of returns are required to be filled under the GST regime which in turn makes the documentation tedious.

The study also emphasises on the finding that functioning of GST system requires more manpower, hence increasing the necessity of recruiting skilled employees or providing effective training to the bank employees. Also, most of the bank employees are of the opinion that GST law should be made more user friendly to banks by reducing the number of returns to be filled, upgrading the GSTN portal to make the reconciliation of GSTR easier.It also shows that the GST system has improved the banking services when compared with VAT system. It also emphasises GST system is always better than the VAT system as the GST will increase banks business which in turn helps in attaining additional demands of funds. Additional demand of funds in turn will increase the number of the transactions of the bank. The effect of GST on banking transactions, operations and enforcement would need to be completely reconsidered. GST therefore has both positive and negative impact on the banking sector. Nevertheless, it is better than the VAT system in more ways than one. This study can be further extended by Non-banking financial companies to get a clear picture of the benefits of GST.

Authors' Contributions:
The authors contributed equally to this work.

References:
Hawaldar, I.T., Spulbar, C., Lokesha, Birau, R., Rebegea, C. (2020) Analyzing non-performing assets in agricultural loans: A case study of India, *Revista de Ştiinţe Politice. Revue des Sciences Politiques*, No. 65, pp.42-53.
Kaur, B., Mehta, L., Juneja, R. (2018). Impact Of Goods & Services Tax On Indian Banking Sector, International Journal of Innovative Research and Advanced Studies (IJIRAS), 5(4), pp. 107-111, ISSN: 2394-4404, https://www.ijiras.com/2018/Vol_5-Issue_4/paper_21.pdf.
Kumar, K.A., Pinto, P., Hawaldar, I.T., Spulbar, C., Birau, R. (2021) Crude oil futures to manage the price risk of natural rubber: Empirical evidence from India,

Agricultural Economics, 67: 423–434, https://doi.org/10.17221/28/2021-AGRICECON, ISSN 0139-570X (Print), ISSN 1805-9295 (On-line).

Kumar, A., Rafee, M. (2017) Analysis Of Impact Of Gst On Various Sectors Of Indian Economy, Journal of Management Value & Ethics, (A quarterly Publication of GMA), Oct.-Dec. 17, Vol. 7, No. 4, 119-125 pp., IIJIF 2.897, GIF 0.565, ISSN-2249-9512, http://www.jmveindia.com /journal/FINAL_FINAL_OCT-DEC_17.pdf.

Meena, G. (2018) Impact of GST on banking sector, International Journal of Innovative Research in Management Studies (IJIRMS), 3(1), pp.14-17, http://www.ijirms.com/downloads/0202201801-02-2018.pdf.

Singh, B. (2017). An Empirical Study On Regional Rural Banks In India, Journal of Management Value & Ethics, 7(4), 4-19 pp., ISSN-2249-9512, http://www.jmveindia.com /journal/FINAL_FINAL_OCT-DEC_17.pdf.

Spulbar, C., Birau, R. (2019). Financial Technology and Disruptive Innovation in ASEAN, Chapter 7 "The effects of cybercrime on the banking sector in ASEAN", Publisher: IGI Global, USA, ISBN13: 9781522591832, ISBN10: 1522591834, EISBN13: 9781522591856, DOI: 10.4018/978-1-5225-9183-2, https://www.igi-global.com/book/financial-technology-disruptive-innovation-asean/219369.

Swadia, B.U. (2016). Comparison between indirect tax and GST, Recent Trends - A Referred International Journal of Multidisciplinary Research, 2(4), 63-74 pp., ISSN: 2348 – 9715.

APPENDIX

Questionnaire

*Required

1. Which type of tax system is preferable•
   Mark only one oval.
   Value added Tax (VAT)
   Goods and Service Tax (GST)   *Skip to question 3*
   Don't Know   *Skip to question 4*

2. If you have chosen option VAT. Why? (Select one or more)•
   Tick all that apply.
   No separate registration for bank branches
   Offline mode for payment available
   Other:_____
   Skip to question 4

3. If you have chosen option GST. Why ? (Select one or more)•
   Tick all that apply.
   Uniform rate
   of tax
   More
   transparent
   Reduce double taxation effect
   Other:_____
   Skip to question 4

4. Please rate your agreement on the following statements
   Mark only one *oval per row*

Strongly disagree
Disagree
Neutral Agree
Strongly Agree

	Strongly disagree	Disagree	Neutral Agree	Strongly Agree
Introduction of GST in India has improved the banking services	O	O	O	O
Introduction of GST has led to increase in bank profits		O	O	O

Investigating the impact of Goods and Service Tax (GST) on the banking sector with reference to selected banks in India

Implementation of GST has made your job easier O O O O

The transition from the VAT system to GST Regime was smooth   O O O O

5. Your opinion on the following issues•

Mark only one *oval per row.*

	Not a Problem	Minor Problem	Severe Problem
Lack of man power	O	O	O
Documentation is tedious	O	O	O
Additional GST levied on bank to bank transaction	O	O	O

6. Any other issues. Please specify

7. GSTN Portal•

Mark only one oval per row

Unsatisfactory
Good Excellent

Satisfaction with GSTN portal

8. What improvements can be made in GSTN portal?

9. Suggestions to improve GST system in India

Skip to question 10

Personal Information

10. Name

11. Designation•

12. Bank Name•

13. Branch•

14. Experience (in years)

15. Email Id

Sharan Kumar Shetty, Cristi Spulbar, Ramona Birau, Petre Valeriu Ninulescu

How to cite this article:
Shetty, S. K., Spulbar, C., Birau, R., Ninulescu, P.V. (2022). Investigating the impact of Goods and Service Tax (GST) on the banking sector with reference to selected banks in India. *Revista de Ştiinţe Politice. Revue des Sciences Politiques*, no. 75, pp. 155 – 170.

Analysing Financial Services Performance Using a Powerful Digital Marketing Platform

DR. Sharan Kumar Shetty

Associate Professor of Finance and Banking

Manel Srinivas Nayak Institute of Management – Mangalore

Email id : sharansai25@gmail.com

ABSTRACT

The term "digital marketing" became popular in the 1990s. Digital marketing advanced as a powerful tool for building a deeper and more relevant relationship with customers in the 2000s and 2010s.The process of establishing and maintaining customer relationships through online activities in order to facilitate the exchange of ideas and products in order to achieve objectives is known as digital marketing.Digital marketing is frequently referred to as online marketing or internet marketing, but this is incorrect. The terms "online marketing" and "internet marketing" are often used interchangeably, but they are both incorrect. Because they are both based on the Internet, many people mistakenly believe that digital marketing and inbound marketing are the same thing, but it is under category of digital marketing.

Key Words; Digital Marketing, Financial Services, Web support, RBI.

INTRODUCTION:

In digital marketing, there is no single father, but some claim Guglielmo Marconi invented the radio in 1896. In 1971, Ray Tomlinson was the first person to send an email. Philip Kotler has made a lot of contributions to the industry, but only a few of them have lasted. Kotler argued that marketing was an important part of economics and that it influenced product and service demand. With the advent of the internet and the growth of the Web 1.0 platform in the 1990s, the term "digital marketing" was popularised. In 2006, when search engine traffic was estimated to have risen to about 6.4 billion in a single month, the digital marketing environment saw its first steep surge. The earliest social networking site to arrive, quickly followed by Facebook, was Myspace. Advertisers needed fresh approaches with new tools to promote their brands & capitalize on the social networking website says, Boulden. The use of the cookie has evolved, and today cookies are programmed to provide several ways for advertisers to collect literal user data, he says. Boulden: The rise of social networking sites such as Facebook and Myspace opened up new doors of opportunities for selling their goods and brands, many businesses realized. It marked the start of a new era for business.

Objectives:

- To understand the current pattern of digital marketing services in the domain of Financial Services.
- To find out customer satisfaction about the price offered and service utilized.

- To suggest an effective system of service with a reasonable price to the customer.

LITERATURE REVIEW

1) **Barrand-1978:** digital marketing is becoming more and more necessary to have good medical quality treatment has been growing as the interpersonal distance between the doctor and the patient.

2) Paul-1996: "Online marketing is the growing form of direct marketing," according to Philip Kotler, "Marketing". The consumer's perception of convenience, price, details on the product, and the internet has affected the service dramatically and modern marketing needs Enterprises to be devoted to market orientation Jaworski and Kohl, 1993.

3) **Rowley-2001:** Internet Advertisement: It is an advertising method that uses the Internet for advertising. Attract clients by providing messages on other pages or advertising banners Famous websites which lead to a company website for online users. The website for the business must be well-organized, well-designed, and easy-to-use to attract more targets the clients.

4) **Rotchford -2001:** said that customers can collect merchandise information and compare a product through suppliers at a low cost, every way across the Internet. They can also evaluate the offerings quickly and effectively and easily find a low price for a particular product.

5) **Kim and Lee -2002:** have indicated that e-store architecture affects the access of customers to e-stores. In the e-store, website design, product and service design, and information comparison, time to complete an online order form, simple product and service search, screen layout, screen complexity, page structure, methods of information retrieval, display of information, colour, and background use, user assistance and speed of user assistance notable variables attracting e-consumers are accessing the e-store.

6) **Biswas-2004:** The research literature indicates that prior knowledge of product knowledge is positively linked to their perceived ability to provide them with information and negatively related to prior product knowledge of those with lower product knowledge.

7) **DeLonge and Reef -2004**: found that customers are more likely to continue shopping online at the moment, as they have greater online shopping know-how. Young adults are also found to have a more optimistic outlook towards online shopping.

METHODOLOGY

This report is based on primary as well secondary data, however primary data collection was given more importance since it is overhearing factor in attitude studies. One of the most important users of research methodology is that helps in identifying the problem, collection, analysing the collection, analysing the required information data and providing an alternative solution to the problem, collecting, analysing the required information data and providing an alternative solution to the problem. It also helps in collecting the vital information that is required by the top management to assist them for the better decision making both day to day decision and critical ones.

Data Sources

Primary as well as secondary data collected for the purpose of present study. Primary data is the data collected for the first time. In this study primary data has been collected using Questionnaire. This Questionnaire was prepared on the basis of the objective of the study.

Secondary data has been collected through journals, magazines, internet websites, textbooks and literature survey. These are the data already collected by someone else for his purpose, is utilized by the investigator for his purpose.

Sampling :

A sample size of 106 were collected using a structured questionnaire.The random sampling technique was adopted to select the respondents for the study purpose. Questionnaire method and google forms were used to collect the data.Data has been presented with the help of bar graph, pie charts, line graphs etc

RESULTS

Table No 1Showing the gender of the respondents

Particulars	Respondents
Female	53
Male	53
Grand Total	106

Chart No 1 showing the gender of the respondents
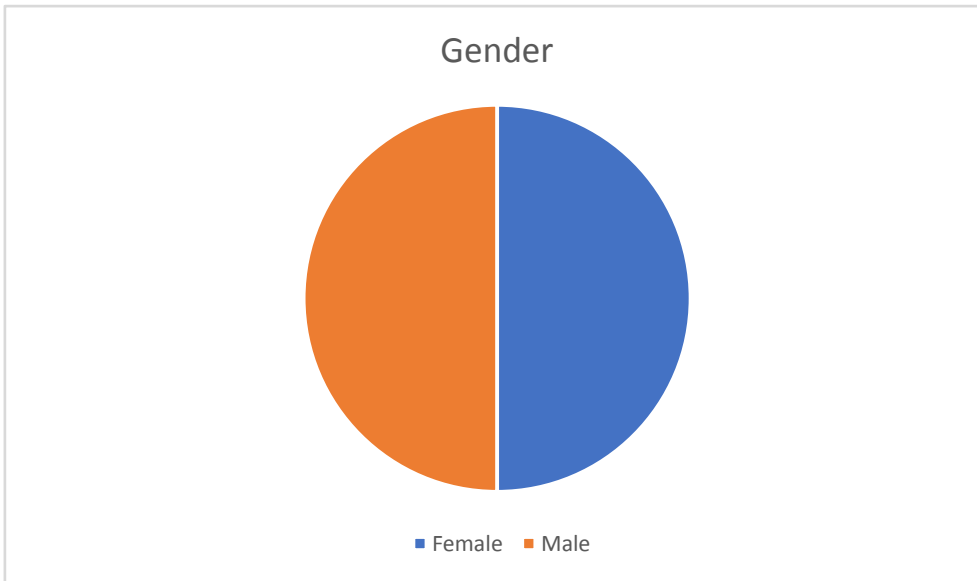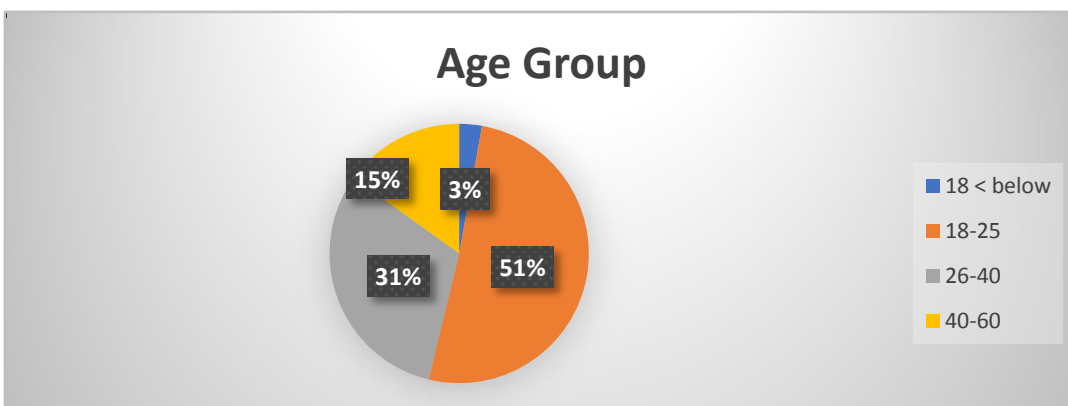
Gender

INTERPRETATION:

In the above able 4.1 we are able to see that the average gender of the respondents is 50%. In the chart 4.1 it is depicted that about 106 respondents are male and female were 53 is male and 53 is female. In this we concluded the both are in same responses.

Table No 2 Showing the age of the respondents

Particulars	Respondents
18 < below	3
18-25	54
26-40	33
40-60	16
Grand Total	106

**Chart No 2 Showing the age of the respondents**

INTERPRETATION

In the above able 4.2 we are able to see that the average age of the respondents is 18-25 years. In the chart 4.2 it is depicted that about 3 respondents are below 18 years of age which counts up-to 3%, similarly about 54 of the respondents are from the age group of 18-25 years were shows 51% and 33 respondents were from the age of 26-40 these is 31%and also 16 respondents are from the age group of 40-60 were 15% . Most of the respondents are from the middle age, this can be due to the health consciousness among them. The people of this age group want to remain fit and become health conscious.

Table No 3 Showing Occupation of the respondents

Particulars	Respondents
A) Student	29
B) Self-Employed	28
C) Professionals	8
D) Salaried	30
E) Retired	3
F) Others	8
Grand Total	106

**Chart No 3 Showing Occupation of the respondents**
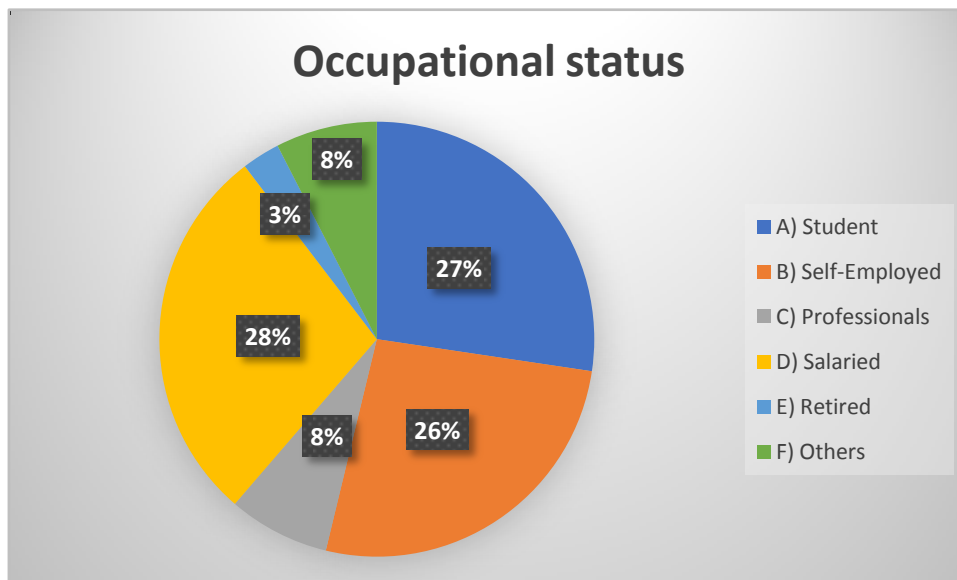
INTERPRETATION

In the above table 4.3 the occupation of the respondents is identified. It accounted for about 29 of the respondents were 27% of students ,28 of the respondents was self Employed in survey with 26%, 8 of the respondents have professionals with 8%, whereas 30 have been occupied at salaried with 28% showing yellow area, and also 3 were we got retired occupation percentage is 3% and how ever 7 others occupation job with 8%. In the chart 4.3 we can analyse that there is an increased number of employed or salaried occupation are more respondents in the study this could be due to the factor that educated and employed citizen.

Table No 4Showing user of internet of the respondents

Particulars	Respondents
Maybe	3
No	2
Yes	101
Grand Total	106

Chart No 4 Showing user of internet of the respondents
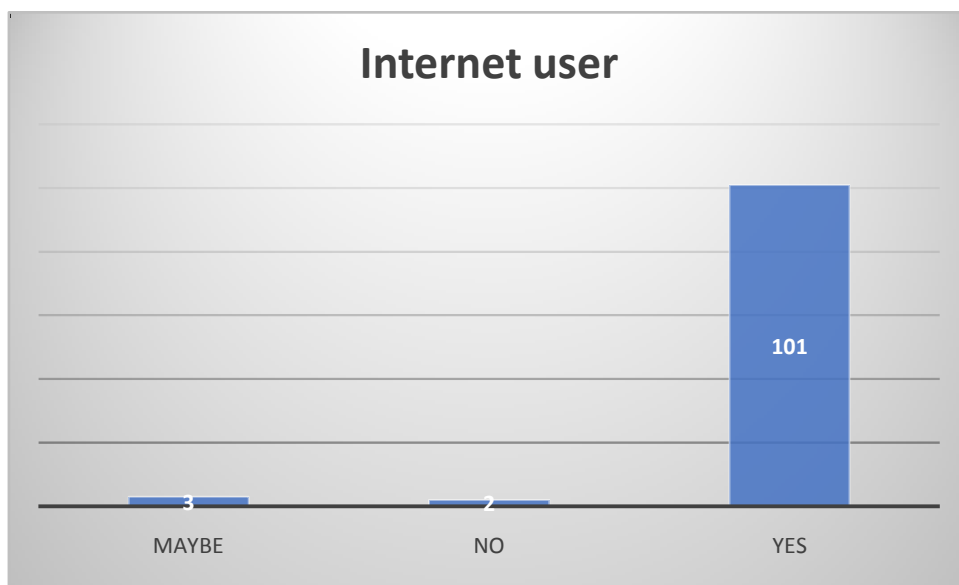
INTERPRETATION

In the above diagram we got 106 respondents in that 101% is internet user they use internet regularly, and 2 % is the non-user of internet they were not going use an internet and also 3% is 50-50 user they use or not in this case they depend upon the moods they are maybe user of internet.

Internet is worldwide connection that reach millions of peoples.

Table No 5 Showing consumer business type of the respondents

Particulars	Respondents
Other	16
agency	4
agriculture	5
Books store	2
Catering	2

Content marketing in the form of images, audio and video.	1
Costume store	1
craft business	1
Enterprises	1
event management	6
Fancy-store	3
Fitness centre	6
footwear shop	1
Government employee	7
Grocery store	1
Hardware	1
hotel	6
Professional business	12
makeup artist	4
Medical shop	4
Private employee	11
residency	4
shopkeeper	2
Showroom service centre	2
Wholesale	1
Grand total	106

**Chart No 5 Showing consumer business type of the respondents**
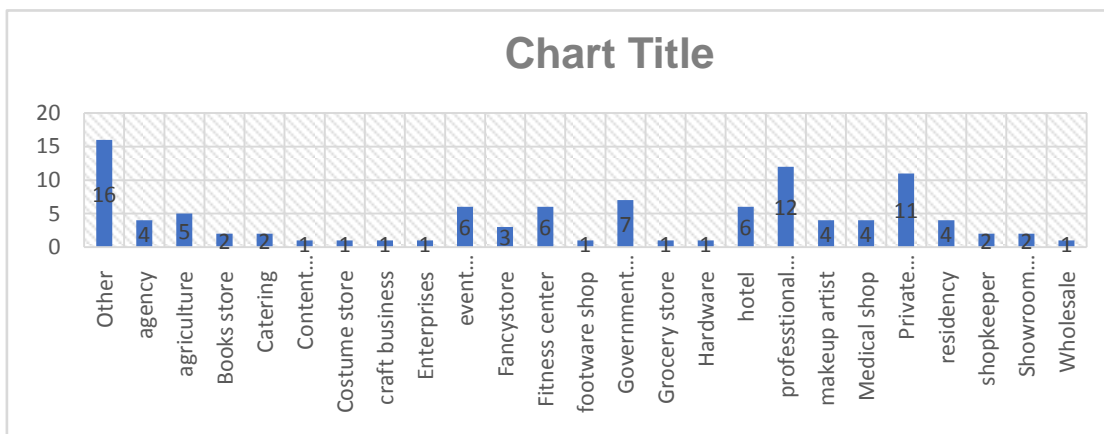
INTERPRETATION

In the column chart we got an different types of business where 16 % is other types business ,4% is an agency business,makeupartist,medicalshop,residency business and 5% is agriculture business and books store,catering,shopkeeper,showroom is an 2% and 6% is event management,fitnesscenter,hotel business and 3% is an fancy store and content marketing,costumestore,craftbusiness,enterprises,footwearshop,groceryshop,hardware,wholesale business are regularly 1%, and government employee are 7% ,professionals are 12% and also 11% is an private employees.

Others type of business is more efficient and also professional business is quite more in this sector .

Table No 6Aware of digital marketing services showing of the respondents

Particulars	Respondents
Maybe	6
No	3
Yes	97
Grand Total	106

Chart No 6Aware of digital marketing services showing of the respondents

\
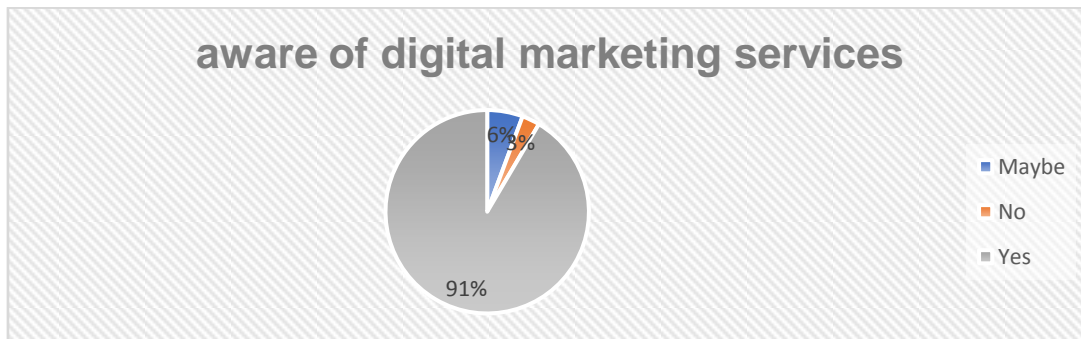
INTERPRETATION

In the table 4.6 the analysis was conducted on the aware of the digital marketing, The aware was measured to be as 3 respondents rated like maybe is a colour of blue, No is colour red area and also yes is indicated in colour green area

as least followed with 3 rating with 3% it as having no awareness of digital marketing services, 6 or 6 % of people said that the maybe or something know or not aware of services

They are neutral and 97 people said the aware of digital marketing services. The larger number of people said knowing the digital marketing platform.

Table No 7 Aware of digital marketing services showing of the respondents

Particulars	Respondents
A) Search Engine Optimization	6
G)all the above	2
B) Social media marketing	31
C) Social media advertising	44
D) Pay per click advertising	15
E) Affiliate marketing	3
F) Web design	5
Grand Total	106

Chart No 7 Aware of digital marketing services showing of the respondents
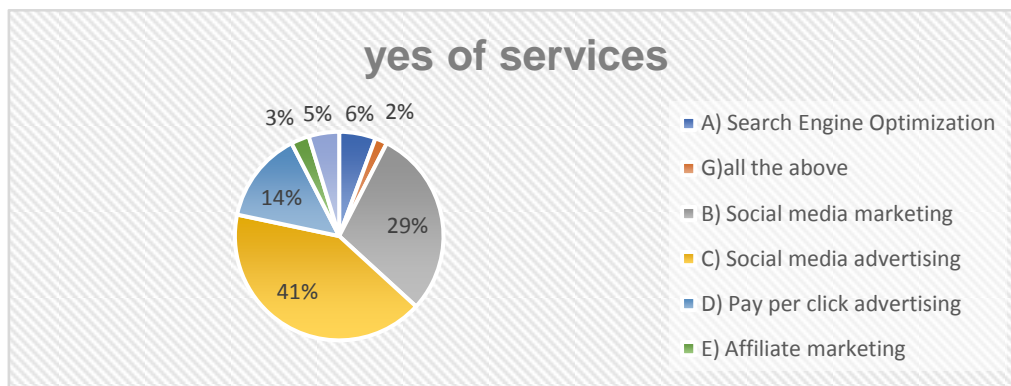
INTERPRETATION

In the above chart 4.6.1shows the customers or peoples they knowing what types of services on their mind sets. In that 6 people are respondent to search engine optimization is 6% that indicates in the blue colour, and they aware of social media marketing is 29% respondent of 31 people they are more influence on the social media marketing, and social media advertising is 41% people are effectively knowing services respondents are 44 people that indicates in the colour purple area, and the people said they are known about pay per click advertising is 14% in the respondents are 15 people, affiliate marketing service are knowing the 3% they are 3 respondents people in the area orange is indicates that one, and web design service are 5 people respondent in the 5% they were said to know that service ,last one is all the above services are effetely knowing 2% of people the rating is 2 is indicate in the area of red colour

The people are more effectively said to knowing services are is social media marketing and social media advertising more powerful.

Table No 8Use to suggest launch/run business services showing of the respondents

Particulars	Respondents

A) Search Engine marketing	5
B) Email marketing	4
C) Social media advertising	67
D) Pay per click advertising	22
E) Affiliate marketing	5
F) Influencer marketing	1
G) Content marketing	2
Grand Total	106

Chart No 8 Use to suggest launch/run business services showing of the respondents
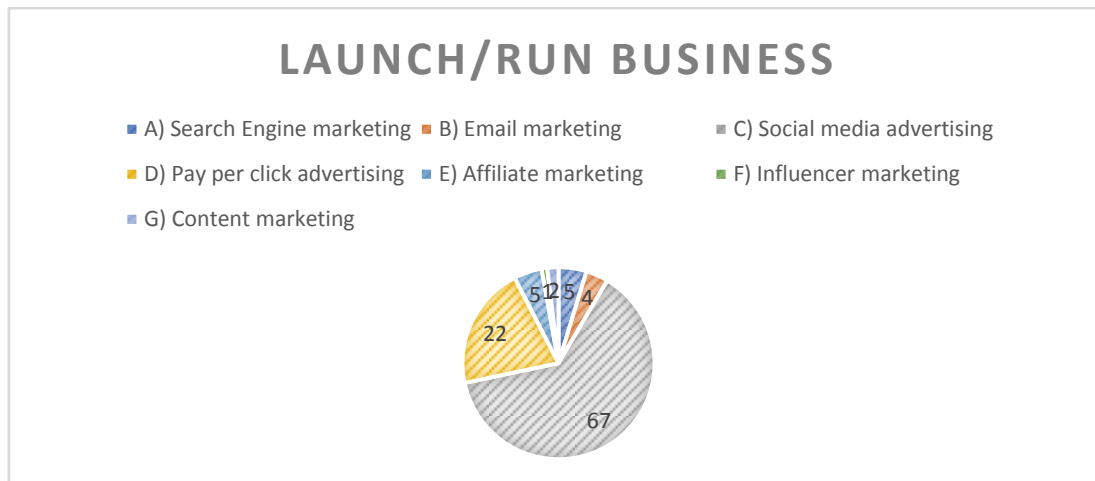
INTERPRETATION

In the above chart shows 106 respondents were people suggest to launch or run business with help of search engine marketing,emailmarketing,social media advertising,pay per click advertising,affiliatemarketing,influencer marketing, Search Engine marketing in these 63% of people said to social media advertising with 67 respondent, and 22respondent said to launch or run business in pay per click advertising with 21% and content marketing is got an 5 respondent with 5% ,5 respondent are believe in that affiliate marketing with 5% and email marketing is got with 4 respondent is 3% and 2 respondent were said to launch or run business with content marketing is 2% and also 1% people said to launch or run their business in the influencer marketing.

Most of the people recommended that the social media advertising that influence the more to more connect the people so consumers can go with this service.

Table No 9 Brand Trust is a matter on digital marketing services showing of the respondents

Particulars	Respondents
Maybe	20

No	14
Yes	72
Grand Total	106

Chart No 9Brand Trust is a matter on digital marketing services showing of the respondents
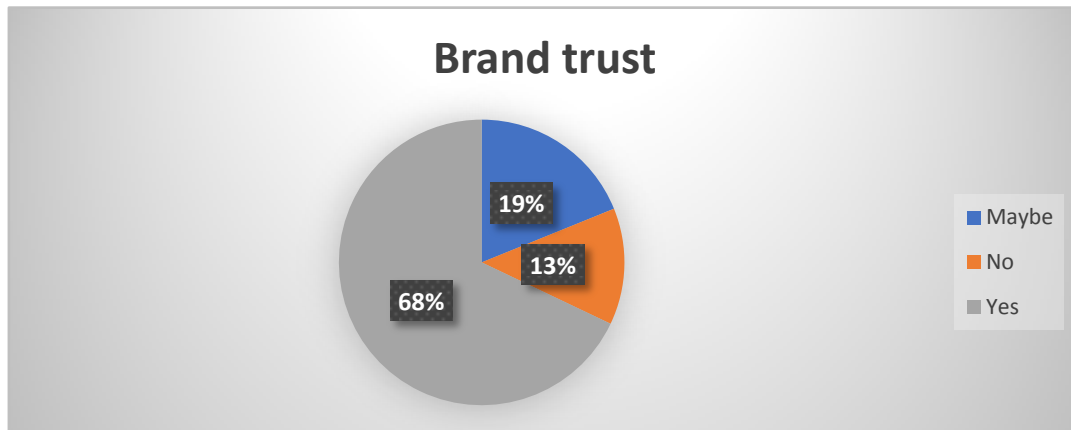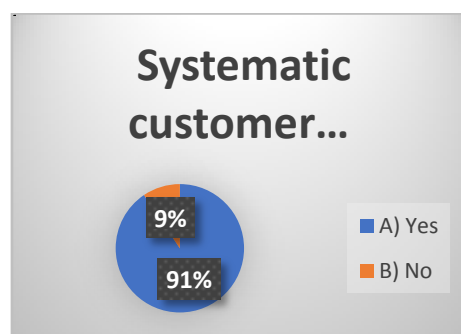

INTERPRETATION

In the chart 4.8 showing the brand trust is matter on digital marketing services, were 106 respondents in that 72,63% respondent go with the brand trust is matter on services and 13% were 14 respondents considered there is not matter between the brand it shows in red colour area and also 20 respondents are neutral they believe or not is 13% people said is indicates blue colour.In this research we know that brand is Powderly matters on the services it attracts the more customers with his brand.

Table No 10 Systematic customer acquisition strategies and marketing trends should follow by digital marketing services showing of the respondents

Particulars	Respondents
A) Yes	96
B) No	10
Grand Total	106

Chart No 10 Systematic customer acquisition strategies and marketing trends should follow by digital marketing services showing of the respondents
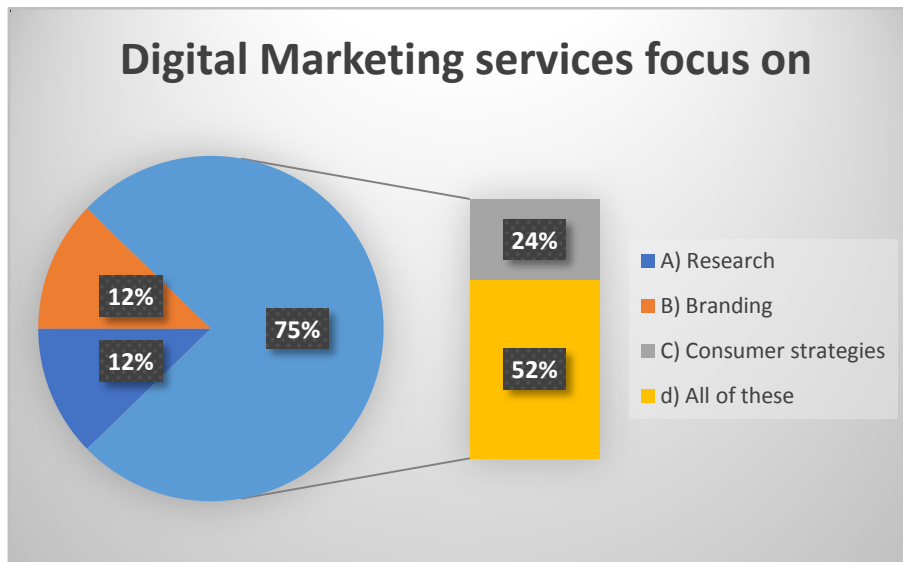
INTERPRETATION

In the above chart4.9 Systematic customer acquisition strategies and marketing trends should follow by digital marketing services; in that we got 106 respondent were 96 peoples are tending to believe in Systematic customer acquisition strategies and marketing trends with 91% respondent and also 10 people said to be there no believe in this system with respondent of 9% people.

In this survey we got that an, yes Systematic customer acquisition strategies and marketing trends should follow by digital marketing services.

Table No 11 Showing the respondents of Digital Marketing services focus on

Particulars	Respondents
A) Research	13
B) Branding	13
C) Consumer strategies	25
d) All of these	55
Grand Total	106

Chart No 11 Showing the respondents of Digital Marketing services focus on

INTERPRETATION

In the above chart 4.10 showing the respondents of Digital Marketing services focus onresearch,branding,consumer strategies and all these methods but consumers and people are said to be banding and research with 12% rating of 13 out of 106 and consumer strategies 24% with respondent of 25 peoples are focus on it and also 52% of people's respondent to be it on 55 rating out of 106 more focus on all these 3 methods.

Table No 12. Showing the respondents of Consumer focus on digital marketing services

Particulars	Respondents
Branding	16
All the above	1
Services	39
Quality	22
Price	27
Services and quality	1
Grand Total	106

Chart No 12. Showing the respondents of Consumer focus on digital marketing services
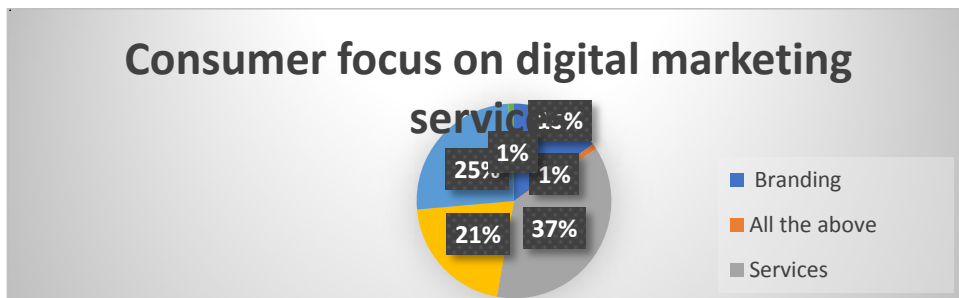
INTERPRETATION

In the above chart 4.11 Consumer focus on digital marketing services.it seen that 16 respondent with 15% people said Branding is more influence on digital marketing services and 39 respondents are depended on services provided by digital marketing they are only looking for Services and 22 respondents with 21% people said to be they believe in Quality and Price where 25% of people with the 27 respondents are go through with Price only they focus on it and 1% peoples are said that they looking for Service and Quality and also 1% people looks for all these facilities and strategies

In this search we know that services are the best on where consumer more focus on Digital Marketing sector.

Table No 13 Showing the respondents of Digital Marketing is better than Traditional Marketing

Particulars	Respondents
No	20
Yes	86
Grand Total	106

Chart No 13. Showing the respondents of Digital Marketing is better than Traditional Marketing
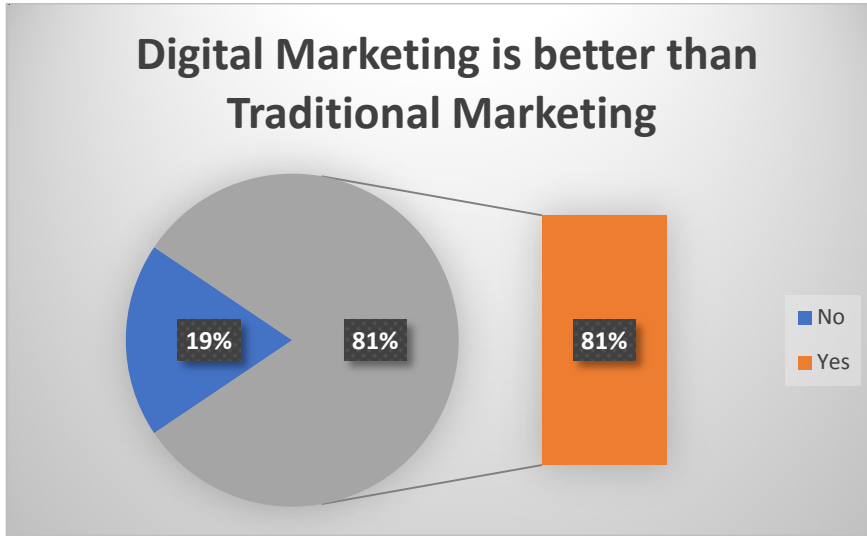
INTERPRETATION

In the above chart 4.11showing the respondents of Digital Marketing is better than Traditional Marketing. Here we clearly know that 86 respondents with 81% of peoples said that Digital marketing is better than than Traditional marketing and 20 respondents, where 19% said that Traditional Marketing is better one.

In this research we know that Digital Marketing is better than Traditional Marketing because the digital platform will reach a greater number of peoples at once.

Table No 14 Showing the respondents of Digital Marketing helpful for your future publicity strategies

Particulars	Respondents
No	8
Yes	98
Grand Total	106

Chart No 14 Showing the respondents of Digital Marketing helpful for your future publicity strategies
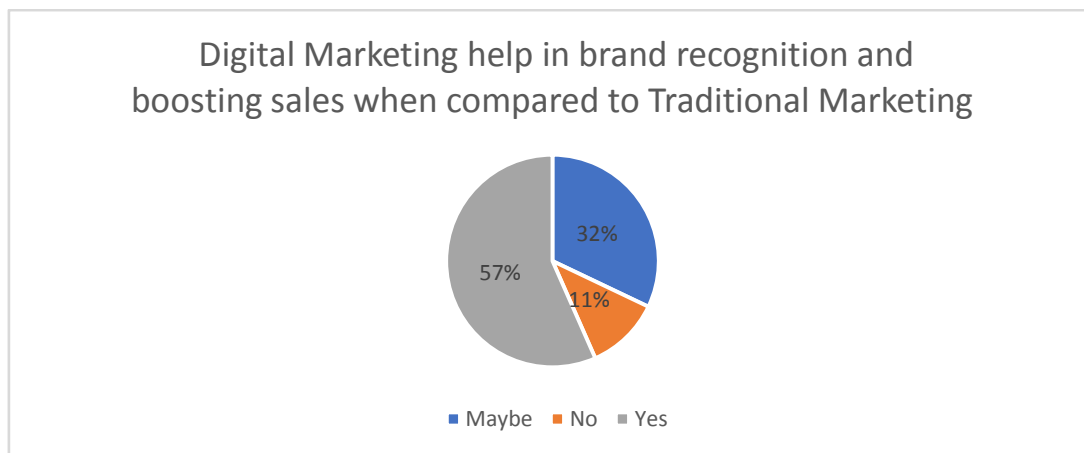
INTERPRETATION

In the above chart 4.13showing the respondents of Digital Marketing helpful for future publicity strategies.it is seen that 98 respondents find the Yes; they believe in the Digital Marketing helpful for future publicity strategies with 92% and 8 respondents are said that no they are not believing in that Digital Marketing will not helpful for future publicity strategies.

TableNo 15 Showing the respondents of Digital Marketing help in brand recognition and boosting sales when compared to Traditional Marketing

14. Digital Marketing help in brand recognition and boosting sales when compared to Traditional Marketing	Respondents
Maybe	34
No	12
Yes	60
Grand Total	106

ChartNo 15 Showing the respondents of Digital Marketing help in brand recognition and boosting sales when compared to Traditional Marketing

Digital Marketing help in brand recognition and boosting sales when compared to Traditional Marketing

INTERPRETATION

In above chart 4.14showing the respondents of Digital Marketing help in brand recognition and boosting sales when compared to Traditional Marketing ,it is analysed that 34 respondents are neutral in this comparison where 12 respondents are said that No were Digital Marketing will not help in brand recognition and boosting sales when compared to Traditional Marketing they said that Traditional marketing is more effective and 60 peoples are said Yes they believe in the Digital Marketing help in brand recognition and boosting sales when compared to Traditional Marketing the respective percentage is 32,11,57%.
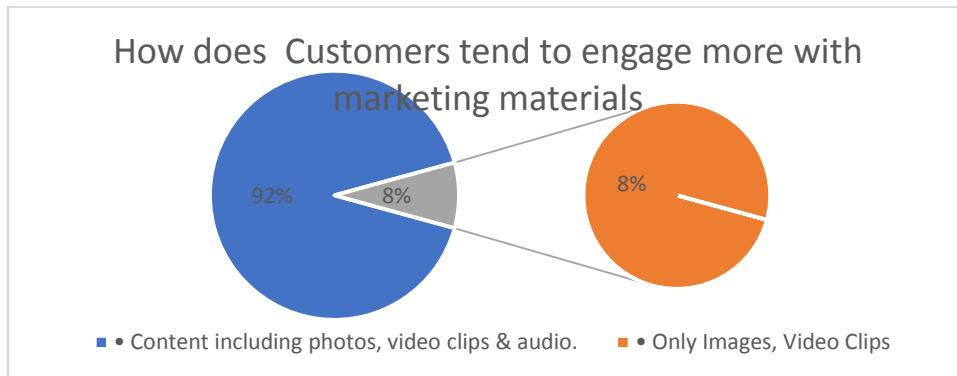
Table No 16 Showing the respondents of How does Customers tend to engage more with marketing materials

Particular	Respondents

• Content including photos, video clips & audio.	97
• Only Images, Video Clips	9
Grand Total	106

Chart No 16 Showing   the respondents of   How does Customers tend to engage more with marketing materials

How does Customers tend to engage more with marketing materials

92%   8%   8%

■ • Content including photos, video clips & audio.   ■ • Only Images, Video Clips

INTERPRETATION

In the above chart 4.15showing the respondents of How does Customers tend to engage more with marketing materials it is analyse that 97 respondents were 92% peoples said that Content including photos, video clips and audio and also 9 respondents where 8% peoples believe in Only images, video clips.

Here we know that more effectively work is move with Content including photos, video clips and audio.

Table No 17   Showing   the respondents of how do you communicate with your Customers Digitally

Particulars	Respondents
• Reviews	51
• Social Media Messages	28
• Social Media Posts	10
• Website	16
•Reviews and website	1
Grand Total	106

Chart No 17 S howling the respondents of how do you communicate with your Customers Digitally

INTERPRETATION

In the above chart shows the 48% where 51 respondents are going with the Reviews to use communicate with customer digitally and 28 respondents are chosen to Social Media Messages to communicate and 10 respondents with 10% consumers use the Social Media Posts and 16 respondents are going with the 15% of website to use it digital platform to communicate and 1% respondents are chosen reviews and websites.

Table No 18 Showing the respondents of Is Digital Marketing helping you in refining and improving your strategy

Particulars	Respondents
No	3
Yes	103
Grand Total	106

Chart No 18 Showing the respondents of Is Digital Marketing helping you in refining and improving your strategy

Digital Marketing helping you in refining and improving your strategy

INTERPRETATION

In the above pie chart 97% of people with 103 respondents said that digital marketing helping in refining and improving strategy and 3 respondents with 3% consumers are said that No, Digital Marketing not help for this percentage consumers or people. Here more effectively go with yes factor.

Table No 19 Showing the respondents of What is more efficiently working for you

Particulars	Respondents	percentage
A) Search Engine Optimisation (SEO)	20	19
B) Social Media Marketing(SMM)	35	33
C) Both	51	48
Grand Total	106	100

Chart No 19 Showing the respondents of What is more efficiently working for you
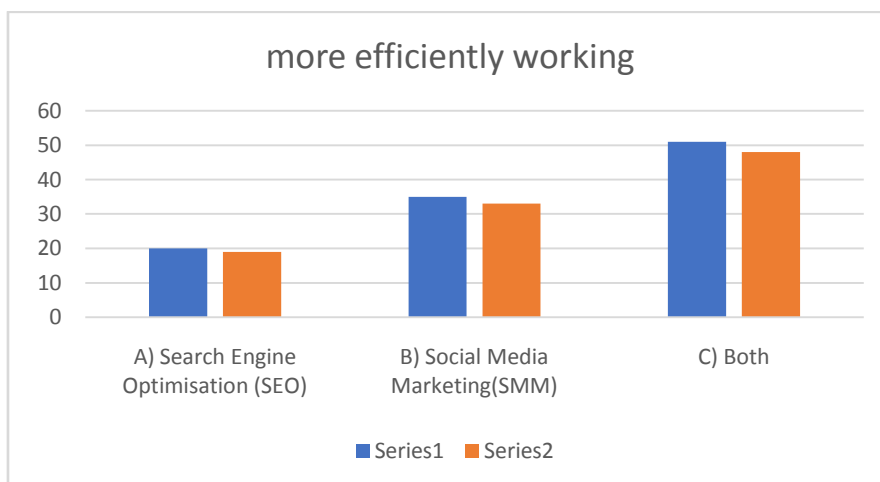
INTERPRETATION

In the above chart showing the respondents and their percentages of in Digital Marketing what it's more efficiently working for as showing the analysis 20 respondents are looks for a Search Engine

Optimisation percentage is 19 and 35 respondents are go with 33% to Social Media Marketing and 51 respondents are said to Both are efficiently works in Digital marketing were 48%. and series 1- indicates the respondents, series-2 is percentage.

Table No 20 Showing the respondents of How is Digital Marketing helping your business

Particulars	Respondents
• Increased Customer Satisfaction & Experience	24
• Precise Targeting	21
•All of the above	30
•Increased Cross-sell upsell rate	6
•Increased Customer Retention	9
•Quick time to value	16
Grand Total	106

Chart No 20 Showing the respondents of How is Digital Marketing helping your business

INTERPRETATION

In the above chart 4.19 describes the 24 respondents are said Increased Customer Satisfaction & Experience with 23% and 21respondents are said Precise Targeting with 20% and 30 respondents are said All of the above with 28% and 6 respondents are said Increased Cross-sell up-sell rate with 6% and 9 respondents are said Increased Customer Retention with 8% and also 16 respondents are said Quick time to value with 16%

Table No 21 Showing the respondents of Is Digital Marketing helping you in generating better Revenue

Particulars	Respondents	Percentage
Maybe	37	35
No	13	12
Yes	56	53
Grand Total	106	100

Chart No 21 Showing the respondents of Is Digital Marketing helping you in generating better Revenue
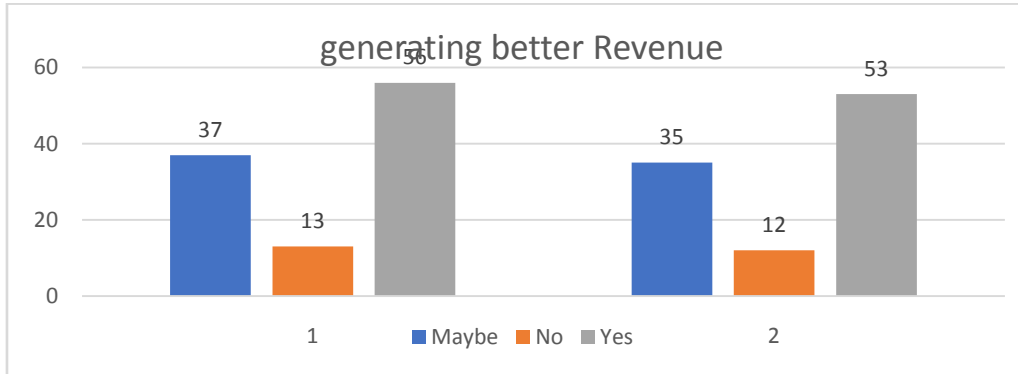
INTERPRETATION

In the above chart indicates Digital Marketing helping you in generating better Revenue its analysis with 106 respondents .here in Series 1 and 2 indicates the respondents and percentage, it seen 37 respondents said Maybe that means 50-50 or neutral response with 35% and 13 respondents are said No digital marketing is not generate better revenue with 12% response and also 56 respondents are believe and said to be Yes Digital Marketing is helping to generate better revenue.

Table No 22 Showing the respondents of How helpful is Digital Marketing in tracking your customers purchase journey on the scale of 1 to 10

Particulars	Respondents	Percentage
A) 3 < Below	2	2
B) 4-5	34	32
C) 6-8	62	59
D) 9-10	8	7
Grand Total	106	100

Chart No 22 Showing the respondents of How helpful is Digital Marketing in tracking your customers purchase journey on the scale of 1 to 10
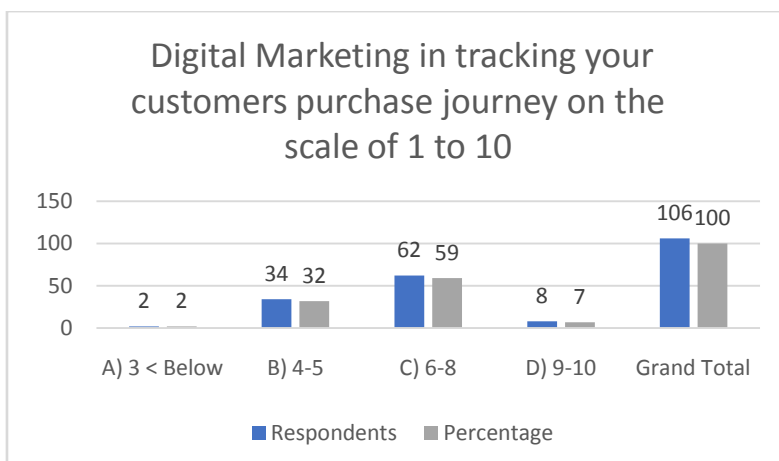
INTERPRETATION

In the above chart 4.20 shows How helpful is Digital Marketing in tracking your customers purchase journey on the scale of 1 to 10 and it describes blue colour indicates the Respondents also green colour represent the percentages were grand total respectively 106 and 100% and 2 ,2% respondents are rating to 3<Below and 34,32% respondents are rating to 4-5 scale and 62,59% of peoples responded to 6-8 rating scale and 8,7% are peoples chosen 9-10 rating scale.

Table No 23 Showing the respondents of Does the Digital Marketing help you achieve your goals

Particulars	Respondents	percentage
No	10	9
Yes	96	91
Grand Total	106	100

Chart No 23Showing the respondents of Does the Digital Marketing help you achieve your goals

INTERPRETATION

In the above chart 4.22 shows the Digital Marketing help you achieve your goals ; it describes in Yes or No responses here No is represented in the colour of brown and Yes in the purple colour .it is seen that among the 10 respondents are chosen No it will not achieve goal and also 96 respondents are said to be with Digital Marketing help to achieve goals with 91%

Table No 24 Showing T-Test: Two-Sample Assuming Unequal Variances

Respondents	Q 1	Q 2
Mean	2.452830189	2.405660377
Variance	0.478706199	0.491015274

Observations	106	106
Hypothesized Mean Difference	0	
do	210	
t Stat	0.493166497	
P(T<=t) one-tail	0.311205129	
t Critical one-tail	1.971324793	
P(T<=t) two-tail	0.622410257	
t Critical two-tail	2.25758803	

QUESTION 1

QUESTION 2
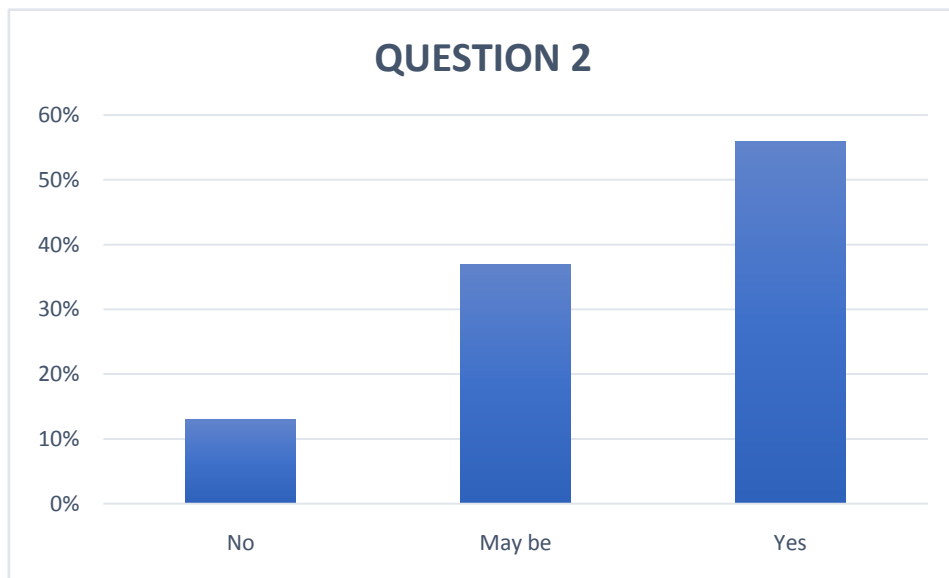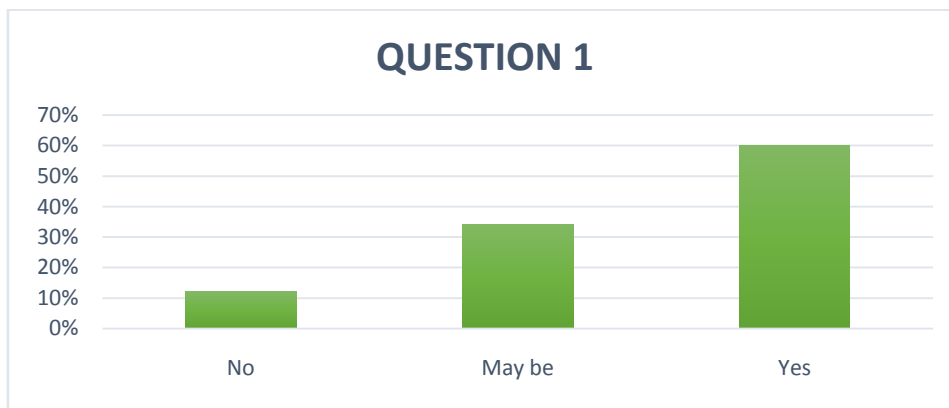
INTERPRETATION

Finding a significant difference when there was none. Incorrectly rejecting the null hypothesis. If P(>=t) two-tail is more than the alpha, then there is no significant difference. Alpha = 0.025, P(T<=t) two -tail =0.6224 is not less than 0.025. Therefore, there is a difference in means between Q1 and Q2.

Table No 25 Showing Enova: Single Factor for Digital Marketing services focus on with age group

SUMMARY				
Groups	*Count*	*Sum*	*Average*	*Variance*
18 < below	3	3	1	0
18-25	4	54	13.5	81
26-40	4	33	8.25	76.91666667
40-60	4	16	4	6.666666667

ANOVA						
Source of Variation	*SS*	*do*	*MS*	*F*	*P-value*	*F crit*
Between Groups	319.1833333	3	106.3944444	2.37030661	0.12633964	3.587433703
Within Groups	493.75	11	44.88636364			
Total	812.9333333	14				

Interpretation

in the above table describes the Sum of square indicates the amount of variability associated with each other source.

Mean of square given as ratio of sum of square and its corresponding of freedom.

Departure mean is indicating average of no of Digital Marketing services focus on with age group at each value.

Hypothesis: $H_0:\beta1=0$,$H_1:\beta\neq 0$

Decision rule: if $<\alpha=$ then reject H_0

From the table p=0.12633964 and α=0.05<0.05, we reject H_0. it is a strong conclusion. From this we can say that no difference accepts the value.

Table No 26 Z-Test: Two Sample for Means for How helpful is Digital Marketing in tracking your customers purchase journey on the scale of 1 to 10 and Which platform(s) do you use to suggest launch/run business services

z-Test: Two Sample for Means		
	scale of 1 to 10	launch/run business
Mean	26.5	15.14285714
Known Variance	62	61
Observations	4	7
Hypothesized Mean Difference	106	
z	-19.23322053	
P(Z<=z) one-tail	0	
z Critical one-tail	1.644853627	
P(Z<=z) two-tail	0	
z Critical two-tail	1.959963985	

Interpretation

In the above is there enough evidence at a =0.05 to conclude that the is Digital Marketing in tracking your customers purchase journey on the scale of 1 to 10 and Which platform(s) do you use to suggest launch/run business services mean differs significantly from 106

Hypothesis:H_0:u=106 ,H_1 :u≠ 106, Rejection Region a=0.05 , reject H0 if z<1.96 or z>1.96

Test statistic's=-19.23322053, P-value: =0 not null vale we got

Decision :z=-19.23322053 is not in the rejection region do not reject H_0 ,there is not enough to conclude that the How helpful is Digital Marketing in tracking your customers purchase journey on the scale of 1 to 10 and Which platform(s) do you use to suggest launch/run business services mean differ significantly from 106.

Table 4.26 showing the Regression for difference between the Consumer focus on digital marketing services and how do you communicate with your Customers Digitally

SUMMARY OUTPUT	
Regression	*Statistics*
Multiple R	0.136557489
R Square	0.018647948
Adjusted R Square	-0.226690065
Standard Error	16.57151218
Observations	6

ANOVA

	do	*SS*	*MS*	*F*	*Significance F*
Regression	1	20.87326944	20.87326944	0.076009206	0.796437026

Residual	4	1098.460064	274.615016		
Total	5	1119.333333			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	13.71565495	15.84757148	0.865473613	0.43560032	-30.28425731	57.71556721	-30.28425731	57.71556721
Count of 16	0.223642173	0.811186293	0.275697672	0.796437026	-2.028572039	2.475856384	-2.028572039	2.475856384

PROBABILITY OUTPUT	
Percentile	Count of 11. Consumer focus on digital marketing services
8.333333333	1
25	1
41.66666667	16
58.33333333	22
75	27
91.66666667	39

Normal Probability Plot
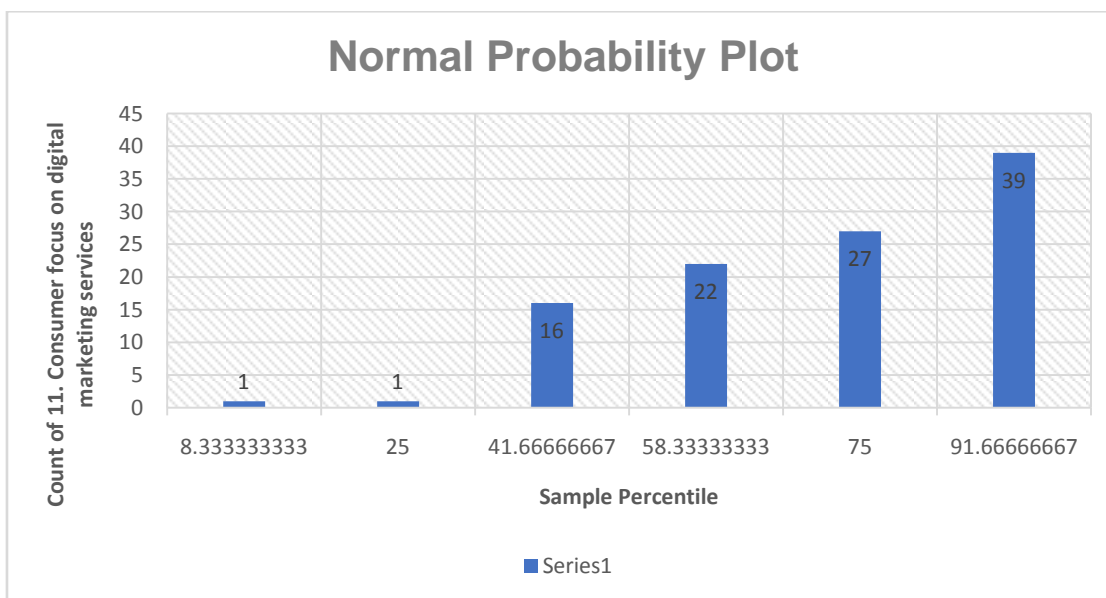
Interpretation

In the table above describes Interpretation

Hypothesis : H_0 no lack in sample percentile

H_1 : lack in sample percentile

Decision rule's<α then reject H_0 .

0.796437026>0.05, so we fail to reject H_0 and it is a weak conclusion. We can say that there is no lack in in sample percentile

Table No 27Showing Correlation between the x-Internet user and y-digital marketing services values

respondents	x	y
x	1	
y	0.999813992	1

Summary

r	0.999813992
up value	1.413950507
Down value	0.019286822
T-hunting	73.31173981
p value	0.004341599
alpha	0.05

Interpretation

in the above tables analyse the there is a significant positive relationship between the number of x and y ,r= 0.999813992 , p=0.004341599 here ɑ=0.05 so P is less than alpha so accept relationship.

DISCUSSION

The gender of the respondents shows that it was males and females are both respondents the most to the survey, which may not due to only male and also female people having more interest in Digital marketing and its Services.The survey was done on a random sampling method; we could see that the highest respondents were from the age category 18-25 years that is 54% of the total, this. It can be due to the Digital Marketing Services who would want to digital services.According to the survey it can be seen that highest people who respondent wereEmployed or salaried people, as they more educated and level of skills so in this survey we concluded that they are more influencer on digital services.Internet is worldwide connection that reach millions of peoples , in this survey we concluded that 101% are internet user they adopt it.In the types of the business more influence by other types of business because in this sector all types minds are available meanseducated,nonskill,entrepreneurs ….etc peoples.The analysis was conducted on the aware of the digital marketing but almost 91% people said that yes, they know about it.The analysis was conducted on the aware of the digital marketing services if they know about Digital Marketing then we got Social Media Advertising more favour with 41% .Consumers are more favour to use to launch or run business services in Social Media Advertising because they more knowing digital service.The brand trust is matter on digital marketing services, yes, it is because it will

give quality and also more recommendations on it by people.Systematic customer acquisition strategies and market trends should follow by digital marketing services yes Systematic customer acquisition strategy and market trends should follow by digital marketing services .The respondents of Digital Marketing services focus on research,branding,consumer strategies and all these methods but consumers and people are said to be all these services are needed when come to focus on services.Consumer focus on digital marketing services, it seen that only Services more needed no other things.In this research we know that Digital Marketing is better than Traditional Marketing because the digital platform will reach a greater number of peoples at once the respondents of Digital Marketing helpful for future publicity strategies.it is seen that, yes Digital Marketing helpful for future publicity strategies.The respondents of Digital Marketing help in brand recognition and boosting sales when compared to Traditional Marketing ,it is analysed that yes, it is help more than Traditional Marketing.Customers tend to engage more with marketing materials yes, they are engaging to go with Content including photos, video clips.

The respondents of how do you communicate with your Customers Digitally the people and consumers are going with the Review system and the respondents of Is Digital Marketing helping you in refining and improving your strategy, definitely here find with yes factor from people and consumers. The respondents and their percentages of in Digital Marketing what it is more efficiently working for as showing the analysis yes both factor that is Search Engine Optimisation and Social Media Marketing.The respondents of How is Digital Marketing helping your business here all the business growing and profit factor is more influencer like Increased Customer Satisfaction & Experience, Precise Targeting, Quick time to value, Increased Customer Retention, Increased Cross-sell up-sell rate.Digital Marketing helping you in generating better Revenue, respondents are believing and said to be Yes Digital Marketing is helping to generate better revenue. How helpful is Digital Marketing in tracking your customers purchase journey on the scale of 1 to 10 and it seen that in this analyse peoples responded to 6-8 rating scale.The Digital Marketing help you achieve your goals , it describes in Yes or No responses but peoples are said yes it reach to help business goal with digital marketing strategies. With study of digital marketing, I came to its appearance and extreme growth in the today's scenario.

While doing the survey in this industrial area, Hotel and Residency, Retail store, fitnesscenter,medical store, professionals to find out awareness level of digital marketing services. And I observed that WEBNETWORKZ Digital Marketing is growing well. But some area can improve like price range depend upon services Here we know that clients are looking for proper services but they may not look on prices.blogs are the best way to reach the clients because people have to preferred to see in media to update their knowledge about digital marketing.Brand awareness is more importance to clients they go with brand trust.

Brands want to build a cool presence over digital platforms because the customer will do research about the product after seeing an ad or after getting stimulated.What in feel in client service is convincing customers is bit complex as they too have completed knowledge about the digital marketing and also explaining how we are better than others.In this survey peoples are more know about Social Media marketing so company can approach clients to take these services.Digital marketing work is all about a squad job and it always tried to give best out of all.

Conclusion

We learn from the study that digital marketing is a growing field, especially in these days of rapid fulfilment. According to the study's findings, the majority of consumers are anticipating a new way of doing digital marketing in comparison to traditional marketing. The majority of respondents are aware

of digital marketing services, and some are using most of them. The majority of respondents are most aware of Social Media Marketing and people say that yes, it improves revenue and goal attainment.

REFERENCES

1. Agrestic, S., Bough, B. B., &Milevsky, J. I. (2010). Perspectives on Social Media Marketing.
2. Barksdale, H. C., & Darden, B. (1971). Marketers' Attitudes toward the Marketing Concept. Journal of Marketing, 35(4), 29. https://doi.org/10.2307/1250454
3. Barnes, S. J., &Virgen, R. T. (2002). An integrative approach to the assessment of e-commerce quality. Journal of Personality Assessment, 3(3), 114–127. https://doi.org/10.1080/00223891.2013.770400
4. Barney, J. a Y. B. (2016). Trustworthiness as a Source of Competitive Advantage Author (s): Jay B . Barney and Mark H . Hansen Source : Strategic Management Journal , Vol . 15 , Special Issue : Competitive Organizational Published by : Wiley Stable URL : http://www.jstor.org/stab. 15, 175–190.
5. Beaudoin, C. E. (2008). Explaining the relationship between internet use and interpersonal trust: Taking into account motivation and information overload. Journal of Computer-Mediated Communication, 13(3), 550–568. https://doi.org/10.1111/j.1083-6101.2008.00410.x
6. American Marketing Association (2016), The Four Faces of Digital Marketing https://www.ama.org/marketing-news/the-four-faces-of-digital-marketing/
7. Campaign Monitor (2018) https://www.campaignmonitor.com/blog/email-marketing/2018/12/70-email-marketing-statsyou-need-to-know/
8. Deloitte (2020), Navigating the New Digital Divide
9. https://www2.deloitte.com/content/dam/Deloitte/us/Documents/consumerbusiness/us-cb-navigating-the-new-digital-divide-051315.pdf

INVESTIGATING THE IMPACT ON SALARIED EMPLOYEES INVESTMENT BEHAVIOR IN PRIVATE SECTOR ORGANIZATIONS IN COVID-19 PANDEMIC

Sharan Kumar SHETTY
Deputy Vice Chancellor – Research & Quality
Texila American University – Lusaka, Zambia.

Ramona BIRAU
Faculty of Economic Science, University Constantin Brancusi of Tg-Jiu, Romania

Cristi SPULBAR
University of Craiova, Faculty of Economics and Business Administration, Craiova, Romania

Petre Valeriu NINULESCU
University of Craiova, "Eugeniu Carada" Doctoral School of Economic Sciences, Craiova, Romania

Ion FLORESCU
University of Craiova, "Eugeniu Carada" Doctoral School of Economic Sciences, Craiova, Romania

Abstract: *AN "INVESTMENT" INCLUDES EVEN A SAVINGS ACCOUNT EARNING 1% INTEREST. MOST PEOPLE, HOWEVER, REFER TO HIGHER RETURN PRODUCTS LIKE MUTUAL FUNDS, ETFS, AND EQUITIES WHEN THEY TALK ABOUT INVESTING. INVESTING GUARANTEES LONG-TERM FINANCIAL SECURITY FOR THE PRESENT AND THE FUTURE. YOUR INVESTMENTS' INCOME AND FINANCIAL SECURITY ARE POSSIBLE THANKS TO THEM. A DIVIDEND IS ONE WAY THAT INVESTMENTS LIKE STOCKS, BONDS, AND ETFS CAN GENERATE INCOME. THIS SUM IS WHAT SHAREHOLDERS RECEIVE ONLY FOR KEEPING THEIR INVESTMENT. AS A RESULT OF THE MONTHLY, QUARTERLY, OR ANNUAL DISTRIBUTIONS PAID BY MANY INVESTMENTS, YOU CAN BENEFIT FROM PASSIVE INCOME THAT ONE DAY MIGHT TAKE THE PLACE OF YOUR PAYCHECK, SHOULD ALWAYS STRIVE TO INVEST 15% OF YOUR PRE-TAX INCOME, AS A GENERAL RULE OF THUMB. IF YOU BEGIN INVESTING BY THE AGE OF 30, GENERATE AN AVERAGE YEARLY RETURN OF 10%, AND MAKE A MINIMUM OF $21,500 PER YEAR, YOU WILL HAVE AMASSED A MILLION DOLLARS BY THE TIME YOU ARE 65. INVESTORS ARE MORE LIKELY TO BE MEN THAN WOMEN. THIS INVESTING DIFFERENCE, ALONG WITH THE SALARY DISPARITY AND OTHER FACTORS, OVER THE COURSE OF A 35-YEAR CAREER, MIGHT RESULT IN MISSING OUT ON $1 MILLION IN VALUE. IN A SIMILAR VEIN, MEN ARE FIVE TIMES MORE LIKELY THAN WOMEN, REGARDLESS OF AGE, TO REPORT THAT INVESTING IS THEIR TOP PRIORITY.*

| Contact details of the author(s): | Email: sharansai25@gmail.com
ramona.f.birau@gmail.com
cristi_spulbar@yahoo.com
petre.pregi@yahoo.it
ionut.florescu2021@yahoo.com |

Introduction

Income in any form is very essential in the life of every individual. It can be earned by any individual from various sources. Salary is the only source of income, which is normally presumed to be the consistent and regular source of income by its nature. The portion of investments that are allocated to various financial and investment policies of the salaried middle-class individuals on whom this study is based is due to a number of factors, including enjoying the benefits of the best investment schemes, tax exemption, foresight of their/their children's futures, family emergency medical needs, and security reasons for risk coverage. Investment is a form of activity carried out by those who must save money, i.e., investments are made with money saved, or, to put it another way, people invest their money. There are numerous possibilities for investments, including bank, gold, real estate, post services, mutual funds, and much more. Investors constantly place money into the market with a variety of goals in mind, including gain, security, appreciation, and income stability. With a sample size of 205 paid employees and using a questionnaire in Dakshina Kannada, the researchers explored the many forms and routes of investment as well as the elements that are necessary while picking the investment in this study.

Mathivannan and Selvakumar (2011) examined the saving and investment patterns of salaried teachers of Sivakasi Taluk, Tamilnadu and they found that there is great importance of money and money's worth for them and They are regularly preparing budgets for expenditures and compare it with the actual expenditure and take necessary actions if there are any deviations has arrived so far and they are influenced by fashionable and costly items.

But COVID-19 pandemic disproved our assumption relating to salary income. Many salaried employees, especially those engaged in the private sector undertakings faced the problems such as loss of employment, reduced payment and also delayed payment, due to shut down in the business activities during lockdown period. Since income is not guaranteed and also not regular, their savings also depleted to the greater extent, leading to reduced investments by these salaried employees. The amount of money saved by them before COVID-19 pandemic was used to the maximum extent for the consumption purpose, and also to meet emergencies. After the COVID-19 pandemic is subsided, all the business activities slowly resumed and employees were back on their jobs.

The pandemic struck the economy at a time when markets were at an all-time high, the world had the lowest unemployment rates, and investors felt confident and stable about their investments. Suddenly, however, the economy came to a virtual halt as millions of people lost their businesses, jobs, demands were suddenly reduced, and economic certainty was lost. The so-called "New Normal" will incorporate more modern work habits, deeper corporate challenges and changing organizational practices. The COVID-19 pandemic may act as a wake-up call to question conventional wisdom. People might exceed their comfort zones to generate and use data from novel sources throughout previously

unexplored time cycles. In a financial context following COVID-19 pandemic, when recession fears are prevalent. As stock market crash lurk over their heads continually, a wise investor should when creating an integrated and well-rounded design, it is crucial to take the following critical considerations into portfolio of diversified assets and savings No investment plan can be successful if you aren't able to persevere with it over time. Property or real estate investments might have long-term advantages. Now is an excellent moment to expand your investor portfolio because interest rates are at an all-time low and rental income is still dependable.

Need of study

Salaried workers often have a fixed income stream, and their investment habits can vary. In relation to this, the researcher has made an effort to learn more about the investing habits of paid investors in the mangalore region. The investment's understanding will be useful.

Problem statement

Salaried workers often have a fixed income stream, and their investment habits can vary. In relation to this, the researcher has made an effort to learn more about the investing habits of salaried investors in the Mangalore Taluk, Karnataka, India, understanding investors' investment preferences will be useful. Return, risk, safety, and liquidity can be used to summarize the characteristics of economic and financial ventures. The anticipation of a return is the defining feature of all investments. In actuality, investments are made primarily with the intention of earning a profit.

Objectves of the study:
- To analyse the Pre COVID-19 pandemic investment patterns of salaried households.
- To examine the post COVID -19 pandemic investment patterns of salaried households.
- To assess the factors impacting people's investment behaviour.
- To examine the investing behaviour of salaried investors.

Literature review

Talwar et al. (2021) carried out a research study on the financial behavior (attitude) topics focused on retail investors in the context of COVID-19 pandemic in order to assess the impact of six various dimensions of financial attitudes, financial anxiety, financial security etc. on investment pattern of the retail investors during the pandemic period. For this research the author has considered 404 retail investors as a sample size. The results of the study concluded that there is a positive influence of financial attitude on the investment patterns of retail investors. Gurbaxani and Gupte (2021) also investigated the investor behavior in the context of COVID-19 pandemic based on a case study for an emerging economy such as India. Moreover, Spulbar et al. (2022) also investigated the effects of COVID-19 pandemic considering digital and technological development, but also poverty alleviation implications. Other research studies focus on the behavior of financial markets in India in the context of extreme events such as the global financial crisis or the COVID-19 pandemic (Trivedi et al., 2021; Samartha et al., 2022; Rashmi Rupesh et al., 2021).

Shukla (2016) examined the Indian women Investment behavior and Decision-making process based on a case study for North Gujarat Region from the developing country such as India. In this regard, it was concluded that the majority of the women preferred traditional mode of investment practices. Behavioral finance is a new emerging science that studies the irrational behavior of the investors (or general people). Achar (2012) have conducted a research study and the analysis have examined individual characteristics of teachers such as the following: marital status, age, gender, and lifestyle determined the savings and investment behavior of teaching community in the study region. In

addition, this empirical study considered monthly family income, stage of family life cycle, and upbringing status emerged as main determinants factors of financial savings and also investment attitude (behavior). Nayak et al. (2021) investigated the purchasing behavior of consumers in India and suggested that e-commerce sector has registered significant increases in this developing country. On the other hand, the amount of earnings of employees working in private sector enterprises is not to the level as before the pandemic. During this situation, their savings and investment patterns have seen a drastic change. Investment is also an essential part in the life of every individual. It is nothing but purchase of assets or goods, both physical and financial with the purpose of building wealth which can be consumed by them in the future. In finance parlance, investment is deployment of funds in those assets which will offer returns in the future or they can be sold at higher prices to make profits. Investments always carry some degree of risk, since they are always future oriented. Most of the investors invest their savings in those investment alternatives which offer higher returns, without any loss in money invested by them. From March 2020, entire world and every business sector is worst affected by the pandemic. This has caused the change in the level of income, savings and investment of salaried employees, especially in case of those serving in private sector. Hence, the basic goal of this research is to analyses the income, savings and investment patterns of Towards Excellence Investment. The COVID-19 pandemic shock, like our response, was unprecedented in our lifetime. Investing activity in the pandemic has become more emotional experience for the investor due to the markets' extreme volatility, unpredictable nature, and shifting sentiments between the investors.

Research methodology

The study is primarily empirical and is built on information acquired from both primary and secondary sources. The respondents being studied are salaried employees of private sector businesses.The study sample comprised of 205 respondents from Mangalore taluk from India through Google forms.

Sample size

Only 205 private sector salaried employees provided the data because the population under consideration is very large. Convenience sampling was used to choose the sample. The Google Forms Questionnaire Method was used to collect the data needed for this study. This method was applied to conduct a sample survey. For data gathering and interpretation, statistical tools including tables, percentages, and averages are employed, along with Microsoft Excel.

Statistical Analysis

The statistical software for social sciences version 16 was used to evaluate the data entered into Microsoft Excel in order to determine the link between knowledge of investment. For descriptive statistical metrics like percentage, cumulative percentage, and frequency, computations were made. The relationship between awareness and other qualities was later determined by analyzing the data. To further evaluate the data, a chi-square statistical test was performed, an inferential statistical test like regression. Differences were deemed statistically significant with a 5% error rate.

The data gathered from multiple respondents must be analyzed before conclusions can be drawn. As a result, attempts have been taken in this chapter to analyze and collect data on "Impact on salaried employee investment behavior in private sector organizations in covid-19" using a questionnaire.

Empirical results

Use of Regression

Table no.1

   a. Income group and purpose behind investment are significant.
   b. Income group and purpose behind investment not Significant.

Model Summary0

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.086[a]	.007	.003	.899	1.985

a. Predictors: (Constant), income

b. Dependent Variable: covid1

Interpretation:

The correlation between the dependent and independent variables is represented by the R-value. For further examination, a number that is taken is more than 0.4. The value in this instance is.086, which is not desirable.

R-square displays the overall variation for the dependent variable that the independent factors may account for. A number higher than 0.5 indicates that the model is capable of identifying the relationship. The value in this instance is.007, which is favorable.

In multiple regression, the adjusted R-square demonstrates the generalization of the results, or the variation of the sample results from the population. A minimal difference between R-square and Adjusted R-square must exist. Since the value in this instance is.003, which is close to.005, it is satisfactory but not perfect.

The model summary table is therefore not sufficient to move on to the following stage. However, there would be no need to modify the data if the results were unacceptable.

Use of Regression

Table no.2

   a. Age group and salary impacted on the investment during Covid-19 are significant.
   b. Age group and salary impacted on the investment during Covid-19 are not Significant.

Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.018[a]	.000	-.005	.763	1.951

a. Predictors: (Constant), age

b. Dependent Variable: salary impact

Interpretation:

The correlation between the dependent and independent variables is represented by the R-value. For further examination, a number that is taken is more than 0.4. The value in this instance is .018, which is not desirable.

R-square displays the overall variation for the dependent variable that the independent factors may account for. A number higher than 0.5 indicates that the model is capable of identifying the relationship. The value in this instance is .000, which is not favorable.

In multiple regression, the adjusted R-square demonstrates the generalization of the results, or the variation of the sample results from the population. A minimal difference between R-square and Adjusted R-square must exist. Since the value in this instance is .005, which is close to .005, it is satisfactory but not perfect.

The model summary table is therefore not sufficient to move on to the following stage. However, there would be no need to modify the data if the results were unacceptable.

Use of Regression

Table no.3

a. Gender group and expenditure income from investment during Covid-19 is significant.
b. Gender group and expenditure income from investment during Covid-19 is not significant.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.068[a]	.005	.000	.757	1.834

a. Predictors: (Constant), gender

b. Dependent Variable: expenditure

Interpretation:

The correlation between the dependent and independent variables is represented by the R-value. For further examination, a number that is taken is more than 0.4. The value in this instance is .068, which is not desirable.

R-square displays the overall variation for the dependent variable that the independent factors may account for. A number higher than 0.5 indicates that the model is capable of identifying the relationship. The value in this instance is .005, which is favorable.

In multiple regression, the adjusted R-square demonstrates the generalization of the results, or the variation of the sample results from the population. A minimal difference between R-square and Adjusted R-square must exist. Since the value in this instance is .001, which is close to .005, it is satisfactory but not perfect.

The model summary table is therefore not sufficient to move on to the following stage. However, there would be no need to modify the data if the results were unacceptable.

Use of Correlations

Table no.4

a. Income and safe/low risk investment avenues is significant.
b. Income and safe/low risk investment avenues is no significant.

Correlations

		income	saferisk
income	Pearson Correlation	1	.151*
	Sig. (2-tailed)		.030
	N	205	205
saferisk	Pearson Correlation	.151*	1
	Sig. (2-tailed)	.030	
	N	205	205

*. Correlation is significant at the 0.05 level (2-tailed).

Interpretation:
Because the person correlation value is less than 1, the study demonstrates that there is a positive correlation between safe risk and income in this instance. 151. It was significant since the significant value in this case was less than 0.05, or.030. It demonstrates that the independent variable, income, is substantial and there is no negative association.
Use of Correlations

Table no.5

a. Income and traditional investment is significant.
b. Income and traditional investment is not significant.

Correlations

		income	traditional investment
income	Pearson Correlation	1	.209**
	Sig. (2-tailed)		.003
	N	205	205
traditional investment	Pearson Correlation	.209**	1
	Sig. (2-tailed)	.003	
	N	205	205

**. Correlation is significant at the 0.01 level (2-tailed).

Interpretation:

Because the person correlation value is less than 1, the study demonstrates that there is a positive correlation between emerging investment and income in this instance 209. It was significant since the significant value in this case was less than 0.05, or .003. It demonstrates that the independent variable, income, is substantial and there is no negative association.

Use of Correlations
Table no.6

   a. Income and emerging investment avenues is significant.
   b. Income and emerging investment avenues is no significant.

Correlations

		income	emerginginv
income	Pearson Correlation	1	.093
	Sig. (2-tailed)		.186
	N	205	205
emerginginv	Pearson Correlation	.093	1
	Sig. (2-tailed)	.186	
	N	205	205

Interpretation:
Because the person correlation value is less than 1, the study demonstrates that there is a positive correlation between emerging investment and income in this instance. 093. It was significant since the significant value in this case was less than 0.05, or .186. It demonstrates that the independent variable, income, is substantial and there is no negative association.

Use of Correlations
Table no.7
   a. Income and purpose emerging in COVID-19 pandemic in precovid is significant.
   b. Income and purpose emerging in COVID-19 pandemic in precovid is not significant.

Correlations

		income	purposecovid1
income	Pearson Correlation	1	.042
	Sig. (2-tailed)		.547
	N	205	205
purposecovid1	Pearson Correlation	.042	1
	Sig. (2-tailed)	.547	
	N	205	205

Interpretation:

Because the person correlation value is less than 1, the study demonstrates that there is a positive correlation between purpose of COVID-19 and income in this instance .042. It was significant since the significant value in this case was less than 0.05 or .547. It demonstrates that the independent variable, income, is substantial and there is no negative association.

Use of Correlations

Table no.8

a. Income and purpose emerging in COVID-19 in postcovid is significant.
b. Income and purpose emerging in COVID-19 in postcovid is not significant.

		income	purposecovid 2
income	Pearson Correlation	1	.116
	Sig. (2-tailed)		.099
	N	205	205
purposecovid2	Pearson Correlation	.116	1
	Sig. (2-tailed)	.099	
	N	205	205

Interpretation:

Because the person correlation value is less than 1, the study demonstrates that there is a positive correlation between purpose of COVID-19 and income in this instance 116. It was significant since the significant value in this case was less than 0.05 or .099. It demonstrates that the independent variable, income, is substantial and there is no negative association.

Use of Chi-Square Tests

Table no 9

a. Income and safe/low risk investment avenues is significant.
b. Income and safe/low risk investment avenues is no significant.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.797[a]	5	.005
Likelihood Ratio	17.136	5	.004
Linear-by-Linear Association	4.346	1	.037
N of Valid Cases	205		

2 cells (16.7%) have expected count less than 5. The minimum expected count is 2.20.

Interpretation:
The value column directly to the right of "Pearson Chi-Square" contains the chi square statistic. The chi square statistic's value in this instance is 16.797.
The "Asymptotic Significance (2-sided)" column in the same row has the p-value (.005). If this value is less than or equal to the designated alpha threshold, the outcome is noteworthy (normally .05). We wouldn't reject the null hypothesis that the two variables are independent of one another in this situation because the p-value is higher than the accepted alpha value. Simply put, the outcome is substantial; the data indicates that gender and investment are the most important determinants.

Use of Chi-Square Tests

Table no.10
   a. Annual income and purpose behind investment is significant.
   b. Annual income and purpose behind investment is not significant.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.103[a]	15	.313
Likelihood Ratio	17.750	15	.276
Linear-by-Linear Association	.365	1	.546
N of Valid Cases	205		

   a. 8 cells (33.3%) have expected count less than 5. The minimum expected count is .92.

Interpretation:

The value column directly to the right of "Pearson Chi-Square" contains the chi square statistic. The chi square statistic's value in this instance is 17.103.

The "Asymptotic Significance (2-sided)" column in the same row has the p-value (.313). If this value is less than or equal to the designated alpha threshold, the outcome is noteworthy (normally .05). We wouldn't reject the null hypothesis that the two variables are independent of one another in this situation because the p-value is higher than the accepted alpha value. Simply put, the outcome is substantial; the data indicates that gender and investment are the most important determinants.

Discussion

The female formed the majority of the respondents. Majority of respondent not invested in precovid because everybody can't build wealth, though. This is due to the fact a saving habit is necessary to build wealth. Not only should you save money, but should also invest it in a systematic manner to build wealth. Majority investor invest in mutual fund in preloved and postcode. Majority20-30 age investor responded the investor income is 15000-25000most of them prefer to invest in mutual fund and they prefer to earn in 1 to 2 year. The majority of respondent started that the pandemic had impact on investment. Investments made by investors were monitored before the epidemic each month, and they were occasionally monitored after it. Principle safety is a key consideration in determining an investor's investment direction. Long term growth is the investor's primary goal. Investor's purpose behand- the-scenes investments before pandemic result in tax savings and after the pandemic result in future expenses.

Amory et al. (2020) conducted a research on "Socio-Economic Impact of COVID-19 on Household Consumption and Poverty for the purpose of evaluating the sociological and economic impact of COVID- 19 on individuals, both during the pandemic period and also during recovery period. The study is carried out in San Francisco area and the outcome of the research showed that, in the absence of social protection, poverty rate will shoot up in the study area. It is also found that the individuals with low income would suffer a lot.

In this study Regression the value in this instance is.086, which is not desirable. R-square displays the overall variation for the dependent variable that the independent factors may account for. A number higher than 0.5 indicates that the model is capable of identifying the relationship. The value in this instance is.007, which is favorable. The value in this instance is.018, which is not desirable a number higher than 0.5 indicates that the model is capable of identifying the relationship. The value in this instance is.000, which is not favorable.

The value in this instance is .068, which is not desirable. A number higher than 0.5 indicates that the model is capable of identifying the relationship. Correlations the value in this instance is.005, which is favorable. Positive correlation between safe risk and income in this instance. 151. It demonstrates that the independent variable, income, is substantial and there is no negative association. There is a positive correlation between emerging investment and income in this instance .209. It was significant since the significant value in this case was less than 0.05, or.003. "Pearson Chi-Square. It was significant since the significant value in this case was less than 0.05, or.547. It was significant since the significant value in this case was less than 0.05, or .099. The chi square statistic's value in this instance is 17. 103. The "Asymptotic Significance (2-sided)" column in the same row has the p-value (.313).

As per the survey, security for their family comes in second on the list of investment goals for salaried investors, after creating various assets and funding their children's education. Thus, investors' primary motivation for investing is to achieve their financial and personal goals. In addition, they understand the value of increasing savings through investments made using safer and less hazardous strategies. Most investors prefer to invest monthly in SIPs and other investment tools followed by yearly investments, showing that investors actively participate in investing among various investment tools. About 205 respondents chose to make their own investment decisions, which is the highest choice among investors, followed by friends and colleagues. Investment Plans are essentially financial tools

that aid in building long-term wealth. To reach our financial objectives, we can invest our savings using a variety of investment plans in India in a disciplined and regular manner into various money-market goods.

Conclusions

Nobody can foresee or foretell the future of this unknown epidemic in the challenging climate of today, during the COVID-19 pandemic time. As salaried class investors learn the value of saving money and making smarter investments with it, people's living standards are rising daily. They would rather live a modest lifestyle than blow their savings on a lavish one. This a survey was done to determine the level of investment awareness and the underlying principles among the salaried class. According to the study's findings, workers have demonstrated that they are satisfied with implement sound investment practices and their financial strategies. The study's conclusions show that the perception of employees has contributed to the investment growth demonstrated by a variety of factors. A similar perception among investors will increase the efficiency of investments. Employees not only giving to the organization they work for individuals do make labour contributions that go toward the investment in the growth of the nation's different investing options. This will further more increase the economy's overall performance and provide more income to employee investors in particular.

References

1. Achar, A. (2012) Saving and Investment Behaviour of Teachers, An empirical study, International Journal of Physical and Social Sciences, 263-286.
2. Amory, M., Markhvida, M., Hallegatte, S., Walsh, B. (2020) Socio-Economic Impacts of COVID-19 on Household Consumption and Poverty, Economics of Disasters and Climate Change, 4:453–479, https://link.springer.com/article/10.1007/s41885-020-00070-3.
3. Gurbaxani, A., Gupte, R. (2021) A Study on the Impact of COVID- 19 on Investor Behaviour of Individuals in a Small Town in the State of Madhya Pradesh, India, Australasian Accounting, Business and Finance Journal, 15(1), 70-92. doi:10.14453/aabfj.v15i1.6.
4. Mathivannan, S., Selvakumar, M. (2011) Savings and Investment Pattern of School Teachers – A Study with Reference to Sivakasi Taluk, Tamil Nadu, Indian Journal of Finance, 5(4), ISSN 0973 – 8711, https://www.indianjournaloffinance.co.in/index.php/IJF/article/view/72516.
5. Nayak, S., Suhan, M., Nayak, R., Spulbar, C., Birau, R., & Gull, S.M., Liu, G. (Reviewing editor) (2021) Antecedents to purchase intention in virtual market space in India: an empirical investigation, Cogent Business & Management, 9:1, DOI: 10.1080/23311975.2021.2003502.
6. Rashmi Rupesh, S., Hawaldar, I.T., Vaswani, A.S., Spulbar, C., Birau, R., Minea, E.L., Suhan, M., Criveanu, M.M. (2021) Predicting financial distress in the Indian textile sector, Industria Textila Journal, 72(5), 503-508, http://doi.org/10.35530/IT.072.05.20214.
7. Samartha, V., Shenoy Basthikar, S., Hawaldar, I.T., Spulbar, C., Birau, R., Filip, R.D. (2022) A Study on the Acceptance of Mobile-Banking Applications in India - Unified Theory of Acceptance and Sustainable Use of Technology Model (UTAUT), Sustainability, 14(21): 14506. https://doi.org/10.3390/su142114506.
8. Shukla, S.N. (2016) Investment Preference of Working Women Of North Gujarat Region, International Journal for Scientific Research & Development (IJSART), 2(2) ISSN [ONLINE]: 2395-1052, pp.68-73.
9. Spulbar, C., Anghel, L.C., Birau, R., Ermiş, S.I., Treapăt, L.-M., Mitroi, A.T. (2022) Digitalization as a Factor in Reducing Poverty and Its Implications in the Context of the COVID-19 Pandemic. Sustainability. 14(17):10667. https://doi.org/10.3390/su141710667.
10. Talwar, M., Talwar, S., Kaur, P., Tripathy, N., Dhir, A. (2021) Has financial attitude impacted the trading activity of retail investors during the COVID-19 pandemic?, Journal of Retailing and Consumer Services, Volume 58, 102341, https://doi.org/10.1016/j.jretconser.2020.102341.
11. Trivedi, J., Afjal, M., Spulbar, C., Birau, R., Inumula, K.M., Pradhan, S. (2021) Modeling emerging stock market volatility using asymmetric GARCH family models: An empirical case study for BSE Ltd. (formerly known as Bombay Stock Exchange) of India, Revista de Ştiinţe Politice. Revue des Sciences Politiques, No. 70, 167 – 176.

QUESTIONNAIRE

1. Gender
2. Age
   20-30
   30-40
   40-50
3. Annual Income
   Below 15000
   15000-25000
   25000-50000
   50000-7500
   75000-100000
   More than 100000
4. Work experience?
   Below 1 year
   1 to 3 year
    4 to 6 year
   Above 6 year
5. Have you invested in any of investment?
   Yes
   No
6. What kind of investment you prefer most?
    Bonds
    Stock
   Fixed deposit
    Mutual fund
   Gold /silver
   Real estate
7. How long would you prefer to invest?
   Less than 1 year
   1to 2 year
   2to 5 year
   More than 5 year
8. During PRE-COVID time have you invested?
   Yes
   No
9. During COVID-19 time where you invested?
    Bonds
    Mutual fund
    Real estate
    Other4

10. Is COVID-19 affecting your investment range?
    Yes
    No

Maybe

11. Are you aware of the following investment avenues? (Tick which ever applicable in the boxes).

    (11) A Safe/Low Risk Investment Avenues:

           Savings account, bank fixed deposits, NSC, Post office savings

    (12) B Moderate Risk Investment Avenues:

           Mutual funds, life insurance, debentures, bonds

    (13) C Traditional Investment Avenues:

           Real estate, Gold /silver, Chit funds

    (14)D High Risk Investment Avenues:

           Equity share market, commodity market, FOREX Market

    (15)E Emerging investment Avenues:

           Virtual Real estate, private equity investment, art and passion

16. How does COVID-19 impact your earning from earning from investment?

    Positive

Negative

    Both positive and negative

17. How often do you monitor your investment?

(17) **Pre-Covid**

Daily

Monthly

Occasionally

(18) **Post-Covid**

Daily

Monthly

Occasionally

19. What are the important factors guiding your investment diction?

 Return

   Safety of principal

Diversification

Progressive value

20. What are your investment objectives?

Income and capital preservation

   Long term growth

Short term growth

21. What is the purpose behind investment?

(21)Pre-Covid

      Wealth creation

      Tax saving

      Future expenses

      Earn returns

  (22). Post-Covid

      Wealth creation

      Tax saving

      Future expenses

      Earn returns

23. Did you earn your expenditure income from your investment during COVID-19?

    Yes

No
Maybe

24. Is your salary impacted on your investment during COVID-19?
    Yes
    No
    Maybe

25. What is your source of investment advice?
    Newspaper
Financial planers
Family or friends
Work place
Books
Magazine
Other

Chapter 3

Investigating the Effect of the COVID–19 Pandemic on Perceived Attitudes Toward Health Insurance in the Minds of Youth:
A Case Study for India

Sharan Kumar Shetty
Manel Srinivas Nayak Institute of Management, India

Birău Ramona
Faculty of Economic Science, Constantin Brancusi University of Targu-Jiu, Romania

Cristi Spulbar
Faculty of Economics and Business Administration, University of Craiova, Romania

ABSTRACT

Health insurance is one of the most essential techniques that can assist in the utilization of health coverage and provide protection to the life of policy holders. However, in Karnataka, youth's attitudes regarding health insurance are quite different from those in other cities. Karnataka residents have not invested in health insurance despite the fact that the city is growing. Nearly 10–30% of young people have health-harming behaviours or conditions that demand the immediate attention of decision-makers and public health specialists. This population is specifically affected by, and is negatively impacted by, nutritional disorders (both malnutrition and overnutrition), tobacco use, harmful alcohol use, other substance use, high-risk sexual behaviours, stress, common mental disorders, and injuries like road traffic injuries, suicides, and violence of various types. The chapter promotes health insurance awareness among youth in Karnataka and knowing the effect of the COVID-19 pandemic on perceived attitudes toward health insurance in the minds of youth as well.

INTRODUCTION

Insurance is an agreement or contract between two parties, by which a insurance company or the state undertakes to provide a guarantee of compensation for specific loss, damage, illness or death in return for payment of a specified premium. It provides protection against a possible risk or loss. An entity which provides insurance is known as an Insurer or Insurance Company. A person or entity who buys insurance is known as a Policy holder. An Insured is an individual or organization who is covered by the policy. The Oriental Life Insurance Company was founded in Calcutta in 1818, marking the beginning of the life insurance industry in India. However, in 1834 this company went bankrupt. The Madras Equitable started doing life insurance business in the Madras Presidency in 1829. The British Insurance Act was passed in 1870, and the Bombay Mutual (1871), Oriental (1874), and Empire of India (1897) insurance companies were founded in the Bombay Residency over the last three decades of the nineteenth century. However, foreign insurance offices that fared well in India, such as Albert Life Assurance, Royal Insurance, Liverpool and London Globe Insurance, dominated this era, and the Indian offices faced stiff competition from the foreign firms.

The Government of India began publishing the returns of Indian insurance companies in 1914. The Indian Life Assurance Companies Act of 1912 was the first piece of legislation to regulate the Life Insurance Industry in India. Principal Agencies were removed by the Insurance Amendment Act of 1950. On January 19, 1956, an Ordinance was passed to nationalise the Life Insurance Industry, and the Life Insurance Corporation was established the following year. Until the late 1990s, when the insurance industry was reopened to the private sector, the LIC enjoyed a monopoly. General Insurance has a history that goes back to the western Industrial Revolution and the subsequent expansion of sea-faring trade and commerce in the 17th century. General Insurance in India dates back to the British creation of Triton Insurance Company Ltd in Calcutta around 1850. The Indian Mercantile Insurance Ltd was founded in 1907. This was the first company to do business in all types of general insurance. The General Insurance Council, a section of the Insurance Association of India, was founded in 1957. The General Insurance Council drafted a code of ethics to ensure ethical behaviour and sound business practises. The Insurance Act was updated in 1968 in order to control investments and establish minimum solvency margins. At the time, the Tariff Advisory Committee was also established. General insurance was nationalised on January 1, 1973 after the General Insurance Business (Nationalisation) Act was passed in 1972. The National Insurance Company Ltd., the New India Assurance Company Ltd., the Oriental Insurance Company Ltd and the United India Insurance Company Ltd were formed from the amalgamation of 107 insurers. The General Insurance Corporation of India was

Related Content

Mental Health Predictions Through Online Social Media Analytics
Moumita Chatterjee, Subrata Modak and Dhrubasish Sarkar (2023). *Cognitive Cardiac Rehabilitation Using IoT and AI Tools (pp. 44-66).*
www.igi-global.com/chapter/mental-health-predictions-through-online-social-media-analytics/325522?camid=4v1a

Anticoagulation Options
Michael Mazzeffi and Ashleigh Lowery (2015). *Modern Concepts and Practices in Cardiothoracic Critical Care (pp. 253-277).*
www.igi-global.com/chapter/anticoagulation-options/136913?camid=4v1a

Quality and Safety
Daniel Rubin and Avery Tung (2015). *Modern Concepts and Practices in Cardiothoracic Critical Care (pp. 16-35).*
www.igi-global.com/chapter/quality-and-safety/136902?camid=4v1a

Design Methodology
(2023). *Wearable and Implantable Electrocardiography for Early Detection of Cardiovascular Diseases (pp. 58-68).*
www.igi-global.com/chapter/design-methodology/329309?camid=4v1a

Perceived Attitude of Youth Towards Cryptocurrency Investment: A Case Study for India

Sharan Kumar SHETTY⋆, Cristi SPULBAR⋆⋆, Ramona BIRAU⋆⋆⋆, Mircea Laurentiu SIMION⋆⋆⋆⋆

A R T I C L E   I N F O

A B S T R A C T

The role of youth in investment is huge when we compare that to the old generation and their perceived attitudes about cryptocurrency investment is getting increased these days in India. This study's primary goal was to assess people's attitudes among young people regarding cryptocurrency awareness and investment. Most of the youth have not yet purchased bitcoin, were just familiar with cryptocurrencies, and lack a comprehensive overview of potential risks. The study's data was gathered from primary and secondary sources of data. The fundamental information obtained by a questionnaire sent to more than 200 active and passive investors. The secondary sources of data used for the completion of this assignment include journals, magazines, internet websites, textbooks, and a review of literature. Several hypotheses were generated and evaluated with the intention of providing youths with useful suggestions.

1. Introduction

The term of cryptocurrency or crypto-currency or even the short version of crypto, as it is known in financial literature represents a digital currency which operates as an exchange mechanism over a computer system while is not influenced by any central administration or body or organisation like government authorities or a certain banking system or even bank.

Cryptocurrency and youth make for an intriguing problem. Cryptocurrency is frequently regarded as the financial system of the future due to its use of an original peer-to-peer approach. Since everyone's livelihood depends on money, young people are highly interested in cryptocurrencies because they offer the possibility of a system that enables more rapid and decentralised financial transactions than those currently made possible by available technology. The relationship between the behavioural finance theory and the choices made by Indian Gen Z or Generation Z investors was investigated by Sajeev et al. in 2021.

Problem Statement: Through innovation and using digital money for transactions, the world has transitioned to cashless transactions. India represents an emergingcountry where mining and utilizing Bitcoins are forbidden. In addition, Kumar et al. (2021) have conducted an empirical study on Indian commodity exchange considering the trading potential of this emerging country. However, as per the Supreme Court's judgement, Bitcoin trading is no longer forbidden in India. Ullal et al. (2022) investigated the relationship between artificial intelligence (AI) and machine learning technologies on service area in India, considering that over a half of India's GDP represents services. Because of this, it is crucial to comprehend Indian Bitcoin trading, including how it works, how it developed there, and the participants in these exchanges.

Significance of the study:

The mainobjective of this research study is to estimate the general levels of knowledge that young people have about cryptocurrencies; more specifically, it is to ascertain the degree of understanding that young people have about cryptocurrencies. to evaluate the level of knowledge in terms of foundational understanding, a cryptocurrency perspective, system/technology knowledge, and investing knowledge

Objective of study:

- To study the awareness of cryptocurrency in the minds of youth
- To Analyse the perception of cryptocurrency in youth
- To examine the problem faced by youths in avoiding cryptocurrency services
- To assist the investors of cryptocurrencies in enhancing the better knowledge in the market.

⋆Manel Srinivas Nayak Institute of Management, India, ⋆⋆Faculty of Economics and Business Administration, University of Craiova, Romania, ⋆⋆⋆ ,⋆⋆⋆⋆University of Craiova, Doctoral School of Economic Sciences, Craiova, Romania. Email addresses: sharansai25@gmail.com (S. K. Shetti), cristi_spulbar@yahoo.com (C. Spulbar), ramona.f.birau@gmail.com (Corresponding author – R. Birau), simionmircealaurentiu@gmail.com (M. L. Simion).

2. Literature review

Shaker et al. (2020) have conducted the research study "Profitability of technical trading rules among cryptocurrencies with privacy function" and examined simple moving average trading strategies employing daily price data on the ten most-traded cryptocurrencies that exhibit the so called "privacyfunction". Sample of privacy coins consists of the ten largest cryptocurrencies in terms ofmarket capitalizations as of January 3, 2016. This article studies the profitability of variabletechnical trading rules implemented among a set of privacy coins using popular movingaveragestrategyas applied to stock markets.

Albayati et al. (2020) suggested in their research paper "Accepting financial transactions using blockchain technology and cryptocurrency: A customer perspective approach" that blockchain, but also cryptocurrencies like the following: Bitcoin, Ethereum, and Litecoin, represent some of the most relevant FinTech technologies. There is also discussed an innovative integration model such as the Technology Acceptance Model (TAM).

Ahamad and Pathan (2019) mentioned the importance of cashless payments among customers considering the openness to innovative technologies such as near-field communication (NFC).Apostu et al. (2022) revealed that even NFTs or non-fungible tokens and cryptocurrencies such as Ethereum, Crypto Coin, and Bitcoin are present simultaneously on the same financial market, their prices do not highlight a close correlation over time.

Shynkevich (2021) also investigated the arbitrage profit opportunities on bitcoin and other cryptocurrencies financial markets. Moreover, they argued that Arbitrage represents a key financial concept based on the "law of one price". Hattori and Ishida (2021) analyzed relevant aspects regarding investors arbitrage advantages and opportunities on Bitcoin markets.

Haq and Bouri (2022) have conducted a research study on the linkage between both sustainable cryptocurrencies such as Cardano, Stellar, Ripple, Powerledger, and conventional cryptocurrencies such as Bitcoin, Tether, Ethereum, Binance Coin by also considering the influence of certain cryptocurrency uncertainty indices. However, it is important to examine the idea of a sustainable cryptocurrency investment in the context of an uncertain environment, including affected by the impact of extreme events such as the COVID-19 pandemic or the war between Russia and Ukraine.

3. Empirical analysis and results
Statistical Tools
Correlation

Table no.1. Designation and Cryptocurrency Awareness

		Occupation	Crypto_awareness
designation	Pearson Correlation	1	-.041
	Sig. (2-tailed)		.564
	N	200	200
Crypto_awareness	Pearson Correlation	-.041	1
	Sig. (2-tailed)	.564	
	N	200	200

Interpretation

The correlation coefficient, which is the first value of Pearson's r. This is 0.041 in this instance. Pearson's r ranges from +1 to -1; 0 denotes complete lack of any linear association. Our graph shows a negative correlation of -0.041.

Respondent designation and cryptocurrency awareness are compared, and the results demonstrate a negative association because investors' designations are not necessary to understand bitcoin.

Table no.2. Designation and cryptocurrency Opinion

		Occupation	Crypto_opinion
designation	Pearson Correlation	1	-.047
	Sig. (2-tailed)		.508
	N	200	200
Crypto_opinion	Pearson Correlation	-.047	1
	Sig. (2-tailed)	.508	
	N	200	200

Interpretation

The correlation coefficient, which is the first value of Pearson's r. This is 0.047 in this case. Pearson's r varies range +1 to -1; 0 indicates complete lack of any linear association. Our graph shows a negative correlation of -0.047.

Respondent designation and cryptocurrency opinion are compared and the results demonstrate the Pearson Correlation value is negative it says that there is no difference between the designation and crypto opinion.

Table no. 3. Risk involved in bitcoin and Profitability comparison

		risk involved in bitcoin	Profitability_comparison
risk involved in bitcoin	Pearson Correlation	1	.032
	Sig. (2-tailed)		.649
	N	200	200
Profitability_comparison	Pearson Correlation	.032	1
	Sig. (2-tailed)	.649	
	N	200	200

Interpretation

The first value of Pearson's r is the correlation coefficient. The Pearson's r in this case is 0.032, and it ranges from +1 to -1; a value of 0 indicates that there is no linear correlation at all. The outcome was 0.032. demonstrates the useful correlation.

Due to the positive link between the risk associated with bitcoin and its profitability, the comparison of the risk connected with bitcoin and its profitability is profitable.

Table no. 4. Age and cryptocurrency Opinion

		Age	Crypto_opinion
Age	Pearson Correlation	1	-.111
	Sig. (2-tailed)		.119
	N	200	200
Crypto_opinion	Pearson Correlation	-.111	1
	Sig. (2-tailed)	.119	
	N	200	200

Interpretation

The first value of Pearson's r is the correlation coefficient. Which, in this case, is -0.111 Pearson's r; the value 0 indicates that there is no linear correlation. The range of Pearson's r is +1 to -1. The correlation in our data is unfavourable (-0.111). The comparison of respondent age and crypto opinions yields negative findings, indicating that there is no relationship between viewpoint and age group.

Table no. 5. Investment Goal and Cryptocurrency investment.

		Investment_goal	Crypto_invest
Investment_goal	Pearson Correlation	1	-.049
	Sig. (2-tailed)		.487
	N	200	200
Crypto_invest	Pearson Correlation	-.049	1
	Sig. (2-tailed)	.487	
	N	200	200

Interpretation

The first value of Pearson's r is the correlation coefficient. Which, in this case, is -0.049 Pearson's r; the value 0 indicates that there is no linear correlation; the range of Pearson's r is +1 to -1. Our findings demonstrate a -0.049 negative correlation.

Comparing investing goal to cryptocurrency investment yields negative results, demonstrating that there is no relationship between the two.

CHI SQUARE

Table no. 6. Designation and Cryptocurrency awareness - Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
designation * Crypto_awareness	200	100.0%	0	.0%	200	100.0%

Table no.7. Designation * Crypto_awareness Crosstabulation

		Crypto_awareness				Total
		A lot	Some	Not much	just hearing about it now in this	
designation	Student Count	12	35	16	2	65
	Expected Count	13.0	35.4	15.3	1.3	65.0
	employee Count	23	65	27	1	116
	Expected Count	23.2	63.2	27.3	2.3	116.0
	self-employeed Count	5	9	4	1	19
	Expected Count	3.8	10.4	4.5	.4	19.0
Total	Count	40	109	47	4	200
	Expected Count	40.0	109.0	47.0	4.0	200.0

Table no. 8. Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
	---	---	---
Pearson Chi-Square	2.915a	6	.819
Likelihood Ratio	2.727	6	.842
Linear-by-Linear Association	.335	1	.563
N of Valid Cases	200		

a. 5 cells (41.7%) have expected count less than 5. The minimum expected count is .38.

Table no. 9. Symmetric Measures

		Value	Approx. Sig.
		---	---
Nominal by Nominal	Phi	.121	.819
	Cramer's V	.085	.819
N of Valid Cases		200	

Interpretation

The first table gives an overview of case processing and details how many valid examples were used for analysis. Only cases with non-missing data for age and cryptocurrency awareness can be considered by the test.

Individual chi-squares are the findings of the chi-square testing tables. The test statistic is 2.915 in value. Because no cell had an expectation that was less than 0.5, the expectation that all expected cell counts will be larger than 0.5 is what is being indicated by the statistic. There are six degrees of freedom (df). The test statistic's associated p-value is p = 0.819, and since this value above the threshold we set for significance (alpha = 0.05), the null hypothesis must be accepted. Instead, we get to the conclusion that there is insufficient data to draw a link between a person's age and their level of crypto awareness.

Table no. 10. Designation and Cryptocurrency Opinion - Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
designation * Crypto_opinion	200	100.0%	0	.0%	200	100.0%

Table no. 11. Occupation * Crypto_opinion Crosstabulation

			Crypto_opinion				
			Criminal activity	Extreme volatility	exist only in comp- uter	few merchants accept it	Total
designation	Student	Count	7	17	15	26	65
		Expected Count	8.4	15.0	20.8	20.8	65.0
	employee	Count	17	26	39	34	116
		Expected Count	15.1	26.7	37.1	37.1	116.0
	self- employeed	Count	2	3	10	4	19
		Expected Count	2.5	4.4	6.1	6.1	19.0
Total		Count	26	46	64	64	200
		Expected Count	26.0	46.0	64.0	64.0	200.0

Table no.12. Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.824a	6	.251
Likelihood Ratio	7.646	6	.265
Linear-by-Linear Association	.441	1	.507
N of Valid Cases	200		

a. 2 cells (16.7%) have expected count less than 5. The minimum expected count is 2.47.

Table no.13. Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.198	.251
	Cramer's V	.140	.251
N of Valid Cases		200	

Interpretation

The first table gives an overview of case processing and details about how many valid examples were used for analysis. Only cases with non-missing data for age and cryptocurrency as opinion can be considered by the test.

Individual chi-squares are the findings of the chi-square testing tables. The value of the test statistic is 7.824. Because no cell had an expectation that was less than 0.5, the expectation that all expected cell counts will be larger than 0.5 is what is being referenced by the statistic. There are six degrees of freedom (df). The test statistic's associated p-value is p = 0.251, and since this value exceeds the threshold, we set for significance (alpha = 0.05), the null hypothesis must be accepted. Rather, we get to the conclusion that there is insufficient data to draw a link between age and the cryptocurrency opinion.

Table no.14. Risk involved in Bitcoin and Probability comparison of Stock market and Bitcoin - Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
risk involved in bitcoin * Profitability_comparison	200	100.0%	0	.0%	200	100.0%

Table no.15. Risk involved in bitcoin * Profitability_comparison Crosstabulation

			Profitability_comparison			Total
			stock mkt	crypto	Both are equally profitable	
risk involved in bitcoin	yes	Count	15	48	27	90
		Expected Count	18.9	37.8	33.3	90.0
	no	Count	27	36	47	110
		Expected Count	23.1	46.2	40.7	110.0
Total		Count	42	84	74	200
		Expected Count	42.0	84.0	74.0	200.0

Table no.16. Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.635a	2	.013
Likelihood Ratio	8.667	2	.013
Linear-by-Linear Association	.209	1	.648
N of Valid Cases	200		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 18.90.

Table no.17. Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.208	.013
	Cramer's V	.208	.013
N of Valid Cases		200	

Interpretation

The first table provides a summary of case processing and lists the number of reliable examples that were used in the analysis. The results of the chi-square testing tables only include cases with non-missing data for the risk associated with bitcoin and the probability comparison of the stock market and bitcoin individually. 8.653 is the test statistic's value. The expectation that all expected cell counts will be greater than 0.5 is what is being referred to by the statistic because no cell had an expectation that was less than 0.5. There are two levels of independence (df). The related p-value for the test statistic is p = 0.013, which indicates that the null hypothesis cannot be disregarded because the p-value is below the cutoff value for significance that we established (alpha = 0.05). We sketch

Table no. 18. Investment Goal and Crypocurrency Investment - Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Investment_goal * Crypto_invest	200	100.0%	0	.0%	200	100.0%

Table no. 19. Investment_goal * Crypto_invest Crosstabulation

			Crypto_invest				Total
			Extreme likely	very likely	somewhat likely	not at all	
Investment_goal	low risk	Count	5	14	14	25	58
		Expected Count	4.6	15.1	14.8	23.5	58.0
	medium risk	Count	8	29	28	46	111
		Expected Count	8.9	28.9	28.3	45.0	111.0
	High risk	Count	3	9	9	10	31
		Expected Count	2.5	8.1	7.9	12.6	31.0
Total		Count	16	52	51	81	200
		Expected Count	16.0	52.0	51.0	81.0	200.0

Table no. 20. Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.250a	6	.974
Likelihood Ratio	1.275	6	.973
Linear-by-Linear Association	.486	1	.486
N of Valid Cases	200		

a. 2 cells (16.7%) have expected count less than 5. The minimum expected count is 2.48.

Table no. 21. Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.079	.974
	Cramer's V	.056	.974
N of Valid Cases		200	

Interpretation

The first table provides a summary of case processing and lists the number of reliable examples that were used in the analysis. Only instances where Investment Goal and Cryptocurrency Investment data are not missing The results of the chi-square testing tables are individual chi-squares. The test statistic has a value of 1.250. The expectation that all expected cell counts will be greater than 0.5 is what is being referred to by the statistic because no cell had an expectation that was less than 0.5. There are six levels of independence (df). The corresponding p-value for the test statistic is p = 0.974. Because the p-value is higher than the 0.05 alpha level we set as the threshold for significance, we must accept the null hypothesis. We arrive to the conclusion that there is enough proof to prove a connection.

Regression

Table no. 22. Gender and Cryptocurrency opinion - Descriptive Statistics

	Mean	Std. Deviation	N
Crypto_opinion	2.83	1.023	200
Gender	1.26	.440	200

Table no. 23. Correlations

		Crypto_opinion	Gender
Pearson Correlation	Crypto_opinion	1.000	.177
	Gender	.177	1.000
Sig. (1-tailed)	Crypto_opinion	.	.006
	Gender	.006	.
N	Crypto_opinion	200	200
	Gender	200	200

Table no. 24. Variables Entered/Removed b

Model	Variables Entered	Variables Removed	Method
1	Gendera	.	Enter

All requested variables entered.

Table no. 25. Dependent Variable: Crypto_opinion - Model Summary b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.177a	.031	.026	1.009

Predictors: (Constant), Gender

Dependent Variable: Crypto_opinion

Table no. 26. ANOVA b

Model	Sum of Squares	df	Mean Square	F	Sig.

1   Regression
   Residual
   Total
	6.520
	201.700
	208.220
		1
		198
		199
			6.520
			1.019
				6.401	.012a

Predictors: (Constant), Gender
Dependent Variable: Crypto_opinion

Table no. 27. Coefficients a

Model	Unstandardized Coefficients		Standardized Coefficients			95% Confidence Interval for B	
	B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1(Constant)	2.311	.217		10.648	.000	1.883	2.739
Gender	.412	.163	.177	2.530	.012	.091	.733

a. Dependent Variable: Crypto_opinion

Table no. 28. Coefficient Correlations a

Model			Gender
1	Correlations	Gender	1.000
	Covariances	Gender	.026

a. Dependent Variable: Crypto_opinion

Table no. 29. Residuals Statistics a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.72	3.13	2.83	.181	200
Residual	-2.135	1.277	.000	1.007	200
Std. Predicted Value	-.591	1.683	.000	1.000	200
Std. Residual	-2.115	1.265	.000	.997	200

a. Dependent Variable: Crypto_opinion

Interpretation

The R value is shown in the model summary table. A significant degree of correlation is indicated by the R value of 0.177. Since the regression coefficient in this case is 0.177, which is greater than 0.05, we may accept the hypothesis, and it demonstrates the strong correlation between the variables. Gender is a test variable, and it shows a strong correlation with crypto attitude.

Table no. 30. Bitcoin investment and Gender - Descriptive Statistics

	Mean	Std. Deviation	N
Bitcoin_investment	1.92	.280	200
Gender	1.26	.440	200

Table no. 31. Correlations

	Bitcoin_investmen t	Gender
Pearson Correlation Bitcoin_investment Gender	1.000 -.065	-.065 1.000
Sig. (1-tailed) Bitcoin_investment Gender	. .182	.182 .
N Bitcoin_investment Gender	200 200	200 200

Table no. 32. Variables Entered/Removed b

Model	Variables Entered	Variables Removed	Method
1	Gendera	.	Enter

All requested variables entered.
Dependent Variable: Bitcoin_investment

Table no. 33. Model Summary b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.065a	.004	.000	.280

Predictors: (Constant), Gender
Dependent Variable: Bitcoin_investment

Table no. 34. ANOVA b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.065	1	.065	.829	.364a
	Residual	15.490	198	.078		
	Total	15.555	199			

Predictors: (Constant), Gender
Dependent Variable: Bitcoin_investment

Table no. 35. Coefficients a

Model	Unstandardized Coefficients		Standardize d Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	1.967	.060		32.693	.000	1.848	2.085
Gender	-.041	.045	-.065	-.911	.364	-.130	.048

a. Dependent Variable: Bitcoin_investment

Table no. 36. Coefficient Correlations a

Model			Gender
1	Correlations	Gender	1.000
	Covariances	Gender	.002

a. Dependent Variable: Bitcoin_investment

Table no. 37. Residuals Statistics a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.88	1.93	1.92	.018	200
Residual	-.926	.115	.000	.279	200
Std. Predicted Value	-1.683	.591	.000	1.000	200
Std. Residual	-3.310	.413	.000	.997	200

a. Dependent Variable: Bitcoin_investment

Interpretation
      The model summary table displays the R value. The R value of 0.065 indicates a strong degree of correlation. We may accept the idea that there is a significant correlation between the variables in this situation because the regression coefficient in this instance is more than 0.05 and equals 0.065.

Table no. 38. Cryptocurrency awareness and gender - Descriptive Statistics

	Mean	Std. Deviation	N
Crypto_awareness	2.08	.715	200
Gender	1.26	.440	200

Table no. 39. Correlations

	Crypto_awareness	Gender
Pearson Correlation Crypto_awareness Gender	1.000 .113	.113 1.000
Sig. (1-tailed) Crypto_awareness Gender	. .055	.055 .
N Crypto_awareness Gender	200 200	200 200

Table no. 40. Variables Entered/Removed b

Model	Variables Entered	Variables Removed	Method
1	Gendera	.	Enter

All requested variables entered.
Dependent Variable: Crypto_awareness

Table no. 41. Model Summary b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.113a	.013	.008	.713

Predictors: (Constant), Gender
Dependent Variable: Crypto_awareness

Table no. 42. ANOVA b

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression Residual Total	1.310 100.565 101.875	1 198 199	1.310 .508	2.579	.110a

Predictors: (Constant), Gender
Dependent Variable: Crypto_awareness

Table no. 43. Coefficients a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constan t)	1.843	.153		12.021	.000	1.540	2.145
Gender	.185	.115	.113	1.606	.110	-.042	.411

a. Dependent Variable: Crypto_awareness

Table no. 44. Coefficient Correlations a

Model			Gender
1	Correlations	Gender	1.000
	Covariances	Gender	.013

a. Dependent Variable: Crypto_awareness

Table no. 45. Residuals Statistics a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.03	2.21	2.08	.081	200
Residual	-1.212	1.973	.000	.711	200
Std. Predicted Value	-.591	1.683	.000	1.000	200
Std. Residual	-1.700	2.768	.000	.997	200

a. Dependent Variable: Crypto_awareness

Interpretation
        The R value is shown in the model summary table. A significant degree of correlation is indicated by the R value of 0.113. Since the regression result in this case is greater than 0.05 and equals 0.113, we can accept the hypothesis that there is a strong correlation between the variables.

4. Discusions
        After data analysis and translation, the following were obtained. The men formed the majority of the respondents. The majority of participants are single. Most respondents (55.5%) are employees, because employees today do not receive higher salaries, so that they invest in the stock market to make money. Male respondents make up 74% of respondents, while female respondents make up 26%. The conclusion that men have a strong willingness to engage in investment activities can be drawn from this. 59.5 percent of respondents had experience of less than a year, Because the pandemic has increased interest in retail involvement. Most of the respondent are between the ages of 20 and 24, because most young people began investing during the epidemic year.
        Most of people (54%) are aware of bitcoin in some way because it has grown in popularity and more people got aware of it when Elon Musk started making money with it. 32% of individuals claim that it only exists on computers, and 32% claim that few merchants accept it, because it lacks a physical form.91.5 percent of respondents have never done invest in cryptocurrency, because Bitcoin is not widely used in India. Because of their knowledge of and research into cryptocurrencies, 45 percent of respondents clearly understand the dangers involved with investments based on cryptocurrencies. 47.5% of respondents believe cryptocurrency investment to be riskier than stock market investment, because of high risk involved in bitcoins and 45.5% believe both to be riskier, because both can occasionally be hazardous. 42% of respondents believe investing in cryptocurrencies produces the greatest returns because they give the highest return on the market. Due to the possibility of markets periodically seeing higher earnings from both the stock market and cryptocurrency, 37% of respondents believe both cryptocurrencies and stock markets produce profits at roughly the same rates. public was unwilling to lose the vast quantities of money on the stock market, 55.5 percent of respondents indicated they preferred medium risk. 54.5 percent.
        Most of people (54.5 %)invested in Equities. In light of the fact that cryptocurrencies were not widely utilised in India, 40.5% of respondents said they were not at all inclined to invest. 57 percent of respondents said they are unable to give an opinion on the long-term viability of the bitcoin technology since most people are unfamiliar of it. that 65% of respondents concur that government regulation of bitcoin is required to shield holders from potential loss and theft because people would be more inclined to invest in the currency if the government oversaw its safety. 53% of people accept bitcoin as a form of payment since it can be used as a store of value as well as a medium of exchange. Even though 47% of respondents still think it's a speculative asset, with regards to All previous economic analyses have concluded that, when seen from the standpoint of monetary economics, Bitcoin acts more like a speculative asset than a legal tender. Majority of respondents believe that the fact that bitcoin is created by a monetary authority and often used in an economy does not affect its worth. Most of respondents think that if the government controls Bitcoin, there would be less risk, which will increase their interest. Majority of respondents think it would increase their interest in utilising cryptocurrency since lower operating expenses allow them to make more money.
        The correlation coefficient, which is the first value of Pearson's r. This is 0.041 in this instance. Pearson's r ranges from +1 to -1; 0 denotes complete lack of any linear association. Our graph shows a negative correlation of -0.041. The correlation coefficient, which is the first value of Pearson's r. This is 0.047 in this case. Pearson's r varies range +1 to -1; 0 indicates complete lack of any linear association. Our graph shows a negative correlation of -0.047. The correlation coefficient, which is the first value of Pearson's r. In this instance, the Pearson's r of 0.032 ranges from +1 to -1; 0 denotes that there is no linear association at all. Our result was 0.032. shows the beneficial correlation. The correlation coefficient, which is the first value of Pearson's r. Which, in this example, is -0.111 Pearson's r, which ranges from+1 to -1; 0 denotes the absence of any linear association. Our data shows a negative correlation, or -0.111. The correlation coefficient, which is the first value of Pearson's r. Which, in this example, is -0.049 Pearson's r, which ranges from +1 to -1; 0 denotes the absence of any linear association. Our data shows a negative correlation, or -0.049. The test statistic is 2.915 in value. Because no cell had an expectation that was less than 0.5, the expectation that all expected cell counts will be larger than 0.5 is what is being indicated by the statistic. There are six degrees of freedom (df). The test statistic's associated p-value is p= 0.819, and since this value above the threshold we set for significance (alpha = 0.05), the null hypothesis must be accepted. Instead, we get to the conclusion that there is insufficient data to draw a link between a person's age and their level of crypto awareness. The value of the test statistic is 7.824. Because no cell had an expectation that was less than 0.5, the expectation that all expected cell counts will be larger than 0.5 is what is being referenced by the statistic.
        There are six degrees of freedom (df). The test statistic's associated p-value is p= 0.251, and since this value exceeds the threshold, we set for significance (alpha = 0.05), the null hypothesis must be accepted.

Rather, we get to the conclusion that there is insufficient data to draw a link between age and the cryptocurrency opinion. The test statistic has a value of 8.653. Because no cell had an expectation that was less than 0.5, the expectation that all expected cell counts will be larger than 0.5 is what is being referenced by the statistic. There are two degrees of freedom (df). The test statistic's associated p-value is p = 0.013, which means that the null hypothesis must be rejected because the p-value is below the threshold we set for significance (alpha = 0.05). We draw the conclusion that there is insufficient information to establish that Risk involved in Bitcoin and Probability comparison of Stock market and Bitcoin. The value of the test statistic is 1.250. Because no cell had an expectation that was less than 0.5, the expectation that all expected cell counts will be larger than 0.5 is what is being referenced by the statistic. There are six degrees of freedom (df). The test statistic's matching p-value is p = 0.974. We must accept the null hypothesis because the p-value exceeds the significant level we established (alpha = 0.05). We come to the conclusion that there is sufficient evidence to establish a relationship between investment goal and cryptocurrency investment. A significant degree of correlation is indicated by the R value of 0.177. Since the regression coefficient in this case is 0.177, which is greater than 0.05, we may accept the hypothesis, and it demonstrates the strong correlation between the variables. A significant degree of correlation is indicated by the R value of 0.065. Since the regression coefficient in this case is greater than 0.05 and equals 0.065, we can accept the hypothesis that there is a strong correlation between the variables. A significant degree of correlation is indicated by the R value of 0.113. Since the regression result in this case is greater than 0.05 and equals 0.113, we can accept the hypothesis that there is a strong correlation between the variables.

One of the most well-known and significant digital currencies in the world today is bitcoin. To make payments and conduct online transactions, people utilise the virtualized systems and services offered by bitcoin. This is the appropriate method of trading, and it has become a crucial component of the financial system. This is the right strategy for running a trading business and making money. If implemented with wisdom and caution, thorough KYC and AML checks and laws may protect investors from different types of malicious cyber activity. Global best practises must be used in this case. Before investing in it, do your research because it is such a volatile asset class and if you don't know what you're doing, you're more likely to lose money than make it. Without social media and other forms of technology, our life would not survive. So that people are aware of bitcoin, we may utilize these platforms. Learn about blockchain before making an investment since you should understand how something operates before you put your money in it. If a whitepaper is published, study it before investing in any ICO. Celebrities are actively promoting or demonising cryptocurrencies on social media. Don't follow the crowd. Make an effort to comprehend the cryptocurrency token's underlying project. Only after understanding it should you decide to invest in it. Don't try to make a quick buck with cryptocurrency because it is a very volatile asset and the prices vary extremely quickly due to the coins' constant trading.

5. Conclusions

Digital or virtual currencies that may be exchanged on a decentralised market are known as cryptocurrencies. In contrast to stocks, they have little to no underlying basic financial worth. Cryptocurrencies are not produced by any central body but rather through private mining. Almost the whole bitcoin market is driven by technical and intuitive speculation. Trading and investing in cryptocurrencies, however, is a relatively inexpensive activity that does not include the legal procedures and capital gains taxes required for shares by the Securities and Exchange Board of India (SEBI). This is a significant factor in the rise in interest in cryptocurrencies among young people in India over the past few years. Young Indians are increasingly using cryptocurrencies on their mobile devices, particularly in tier 2 and tier 3 cities. This is due to a lack of laws as well as the different digital currencies' rapid and simple returns. No amount of legislation, no matter how old or young the investor, can prevent them from going into debt if they are ready to invest without doing their research. Since everyone in our generation uses a smartphone to purchase stocks, we believe that's what has truly fuelled the growth of cryptocurrencies. Without a question, Bitcoin is a very volatile digital asset. This means that while trading this cryptocurrency, market value fluctuations might result in substantial losses. However, young people continue to trade and make investments in this virtual money despite this characteristic. That's because young individuals tend to take risks due to their behavioural psychology.

Reference

1. Albayati, H., Kyoung Kim, S., Rho, J.J. (2020) Accepting financial transactions using blockchain technology and cryptocurrency: A customer perspective approach, Technology in Society, Volume 62, 101320, https://doi.org/10.1016/j.techsoc.2020. 101320.
2. Ahamad, S.S., Pathan, AS.K. (2019) Trusted service manager (TSM) based privacy preserving and secure mobile commerce framework with formal verification. Complex Adapt Syst Model 7, 3, https://doi.org/10.1186/s40294-019-0064-z.
3. Apostu, S.A., Panait, M., Vasa, L., Mihaescu, C., Dobrowolski, Z. (2022) NFTs and Cryptocurrencies - The Metamorphosis of the Economy under the Sign of Blockchain: A Time Series Approach, Mathematics, 10(17), 3218, https://doi.org/10.3390/math10 173218.
4. Haq, I.U., Bouri, E. (2022) Sustainable versus Conventional Cryptocurrencies in the Face of Cryptocurrency Uncertainty Indices: An Analysis across Time and Scales. Journal of Risk and Financial Management, 15(10), 442, https://doi.org/10.3390/jrfm 15100442.

5. *Hattori, T., Ishida, R. (2021) The relationship between arbitrage in futures and spot markets and Bitcoin price movements: Evidence from the Bitcoin markets, Journal of Futures Markets, Volume 41, Issue 1, pp. 105-114, https://doi.org/10.1002/fut.22171.*
6. *Kumar, K.A., Pinto, P., Hawaldar, I.T., Spulbar, C., Birau, R. (2021) Crude oil futures to manage the price risk of natural rubber: Empirical evidence from India, Agricultural Economics, 67: 423–434, https://doi.org/10.17221/28/2021-AGRICECON, ISSN 0139-570X (Print), ISSN 1805-9295 (On-line).*
7. *Sajeev, K.C., Afjal, M., Spulbar, C., Birau, R., Florescu, I. (2021) Evaluating the linkage between Behavioural Finance and Investment Decisions Amongst Indian Gen Z investors Using Structural Equation Modeling, Revista de Științe Politice. Revue des Sciences Politiques, 72, 41 – 59.*
8. *Shaker, A., Grobys, K., Sapkota, N. (2020) Profitability of technical trading rules among cryptocurrencies with privacy function, Finance Research Letters, Volume 35, 101495, https://doi.org/10.1016/j.frl.2020.101495.*
9. *Shynkevich, A. (2021) Bitcoin arbitrage, Finance Research Letters, Volume 40, 101698, https://doi.org/10.1016/j.frl.2020.101698.*
10. *Ullal, M. S., Nayak, P. M., Dais, R. T., Spulbar, C., Birau, R. (2022). Investigating the nexus between Artificial Intelligence and machine learning technologies in the case of Indian services industry. Business: Theory and Practice, 23(2), 323–333. https://doi.org/10.3846/btp.2022.15366.*

APPENDIX

Questionnaire

1. Name_____

2.   Gender
   o   Male
   o   Female
3.   Marital Status
   o   Single
   o   Married
4.   What is your current employment situation?
   o   Student
   o   Employee
   o   Self-employed
   o   Other
5.   How many years of investment experience do you have?
   o   Less than 1
   o   1-3
   o   3+
6.   What's your age group?
   o   <20
   o   20-24
   o   25-30
7.   How much, if at all, have you heard or read about cryptocurrencies such as Bitcoin or Ethereum?
   o   A lot
   o   Some
   o   Not much
   o   Just hearing about it now in this survey
8.   What is in your opinion Bitcoin/crypto-currencies main constraint as a mean of currency?
   o   Criminal activity relation
   o   Extreme volatility
   o   Exists only in computer
   o   Few merchants accept it
9.   Have you ever made a Bitcoin based investment before?
   o   Yes
   o   No
10.   Do you feel like you have a clear understanding of the risks involved with a bitcoin investment?
   o   Yes
   o   No
11.   In your opinion, which is riskier, investing in the stock market or investing in cryptocurrency?
   o   Stock market
   o   Cryptocurrency
   o   Both are equally risky

12.	And which do you think would be more profitable, investing in the stock market or investing in cryptocurrency?
- o	Stock market
- o	 Cryptocurrency
- o	Both are equally profitable

13.	What category would you say best describes your investment goals?
- o	Low risk (I am willing to accept lower returns to minimize the risk of losing any money)
- o	Medium risk (I want moderate returns but don't want to be exposed to very high levels of risk)
- o	High Risk (I want the highest returns and I am comfortable with the risks)

14.	Which of the following have you invested in before?
- o	I have a pension
- o	I have invested in equities
- o	I have invested in bonds
- o	I have invested in alternatives like land, gold, wine & stamps

15.	How likely are you to invest in cryptocurrency this year?
- o	Extremely likely
- o	Very likely
- o	Somewhat likely
- o	Not at all

16.	In the case of Bitcoin, do you trust its technology in the long term
- o	Yes
- o	No
- o	No opinion

17.	Do you think the authorities should regulate Bitcoin to protect Bitcoin holders from potential thief and loss?
- o	Yes
- o	 No
- o	No opinion

18.	Finally, do you consider Bitcoin more like a currency or a speculative asset?
- o	Currency
- o	Speculative asset

19.	Cryptocurrency has no tangible form. Does that diminish the value that you perceive about the currency?
- o	Yes
- o	 No

20.	Cryptocurrency is non-government regulated which offers users more freedom. Would this increase your interest in using cryptocurrency?
- o	Yes
- o	 No

21.	If cryptocurrency is government regulated but remained intangible, would this increase your interest in cryptocurrency?
- o	Yes
- o	 No

22.	Unlike other currencies, cryptocurrency requires much less fees to operate. Would this increase your interest in using cryptocurrency?
- o	Yes
- o	No

Acceptance and adoption of digital financial inclusion by the rural population of India: A case study

**Sharan Kumar Shetty[1], Ramona Birau[2],
Petre Valeriu Ninulescu[3], Robert Dorin Filip[4],
Gabriela Ana Maria Lupu (Filip)[5]**

Abstract:
Technology is important to the banking industry. One of the biggest financial institutions, banking, is constantly looking for ways to offer customers more convenience and a better customer experience through technology-enabled services. In the information age, everyone has a mobile phone, which is an everyday technological item. A growing alternative avenue for offering banking services is mobile banking. Gathered data for this research study from both primary and secondary sources. The basic data was gathered through a questionnaire that was delivered to 224 in rural area. Financial inclusion means having access to services and goods including bank accounts, insurance, remittance and payment services, financial consulting services, etc. Mobile banking is a popular choice among those with low incomes since it is simple to use, handy, affordable, and secure. Historically, the poor have resided in the unorganized sector, where they have little access to banking services. They can now take advantage of the same range of financial services with mobile banking. The mobile banking system is absolutely appropriate for the distant places given that it is an easily accessible, cheaper, more comfortable and faster means of sending and receiving money. Rural areas see an increase in financial activity, which supports economic growth.

Keywords: *financial inclusion, digital payment, bank account, online banking, digital financial inclusion, digital transactions, digital apps, rural area, mobile banking*

[1] Texila American University, Lusaka, Zambia, Email: Sharan.k@tau.edu.zm.
[2] Faculty of Economic Science, University Constantin Brancusi, Tg-Jiu, Romania, Email: ramona.f.birau@gmail.com
[3] University of Craiova, Doctoral School of Economic Sciences, Craiova, Romania, Email: petre.pregi@yahoo.it.
[4] University of Craiova, Doctoral School of Economic Sciences, Craiova, Romania, Email: filiprobertdorin@gmail.com.
[5] University of Craiova, Doctoral School of Economic Sciences, Craiova, Romania Lupuanamariagabriela@yahoo.com.

Acceptance and adoption of digital financial inclusion by the rural population of India: A case study

Introduction

Considering advancements in computing and communications technology over the 20th century, banks were able to grow significantly in size and geographical reach. Many of the major banks in the world failed during the financial crisis of the late 2000s, and there was much discussion about bank regulation.

Digital Financial Inclusion

The discussion of digital financial inclusion is the focus of this study. Everything necessary to understand digital financial inclusion is included in the paper. The number of online financial services applications has grown and is still expanding over time. For their own use or to better serve banks' customers, many of the digital apps used to provide financial services are created by technology or financial technology businesses. Financial inclusion is a multidimensional approach. With technology intervention in financial inclusion, electronic banking activity in rural India leads to increased use of financial services and better living standards. In the rising market, many people using mobile phones still are not able to access banking products and financial services. This indicates a huge untouched market for commercial banks.

Statement of the Problem

In the present world, many people use mobile banking, which benefits the consumer without requiring them to visit the bank. The development of online banking has increased the comfort of providing banking services. Customers have benefited from its speed and convenience. Customers no longer need to drive to the bank and wait in line only to check their account balance or make deposits. A few clicks now will enable them to complete the identical task from home in the comfort.

Objective of the study

- To review the status of digital financial inclusion practices in rural areas.
- To Examine the emergent themes in the literature on financial inclusion.
- To Assess the challenges of rural population in adoption of digital financial practices.
- To determine the influence of digital funding on promoting financial inclusion among the people.

Literature Review

Akhter et al. (2021) conducted a study on revisiting the impact of mobile banking on financial inclusion among developing countries. The study aimed to explore mobile banking facilities' effect on financial inclusion in 17 developing countries. Samartha et al. (2022) developed a research study for an emerging country such as India, on mobile applications on banking using "Unified theory of acceptance and use of technology" also known under the acronym UTAUT) model. Moreover, Ullal et al. (2022) investigated the importance of Artificial Intelligence (AI) and other innovative technologies in the case of the service industry in India, considering inherent complex implications. Blaise and Kosgei (2021) examined the implications of mobile banking in the case of financial inclusion in an developing country such as Burundi. On the other hand, Omar and Inaba (2020) investigated the effect of financial inclusion for poverty alleviation and reduction of income inequality, including for emerging economies. Bakari et al. (2019) also conducted a research study on the impact of financial inclusion on poverty alleviation. In addition, Spulbar et al. (2022) also examined the influence of digitalization in the case of poverty alleviation considering the period of COVID-19 pandemic.

Koomson et al. (2020) examined the relationship between financial inclusion and how vulnerable Ghanaian households are to poverty. The data for the study were obtained from the Ghana Living Standards Survey of 2016/17. The multiple correspondence method was used to produce a financial inclusion index, using a three-stage feasible least squares to estimate households' vulnerability to poverty, through the probit technique. The results revealed that an improvement in financial inclusion has the tendency to reduce the likelihood of household's to be poor by 27% and can therefore averts how households are exposed to future poverty by 28%. The authors also indicated that financial inclusion has the tendency to reduce poverty and has the ability to reduce vulnerability to becoming poor in rural areas than urban areas in Ghana.

Inoue (2019) examined the impacts of financial inclusion on poverty reduction in India. The study used an unbalanced panel dataset from India from 1973 to 2004, using a generalized method of moments (GMM) estimation to estimate the effect of financial inclusion on poverty ratios for public sector banks and financial deepening for private sector banks. The study revealed that financial inclusion as well as financial deepening are statistically inversely related to the poverty ratio for public sector banks, but not for private sector banks

Wakaba and Wepukhulu (2019) studied the effect of mobile money services on Kenya's financial inclusion. The study aimed to determine the effect of Key mobile money services on financial inclusion in Kenya. The study adopted a census research design. The target population comprised four firms (Safaricom, Airtel, Equity and Telkom) that provided mobile money services in Kenya. The study adopted secondary data. The study review period was between 2013 and 2018.

Methodology
Research design

Descriptive research design, as used in this study, is a research technique that outlines the characteristics of the population under examination. Similar to how it was done when respondents' information was gathered all at once. About 224 participants in a community-based study conducted in a rural area made up the sample. The study's target audience was customers in rural areas.

Sources of Data collection

The data collection is the primary source of information for this study. Utilizing both the primary and secondary data, the research was carried out.

- **Primary Data**

A self-structured questionnaire that customers in the rural area completed served as the main source of data for this comparison study. Numerous queries pertaining to various aspects of rural region customers' satisfaction with mobile banking services.

- **Secondary Data**

In this study, secondary data included a thorough literature analysis on the related studies conducted by various authors. Additionally used will be published reports, qualitative data, and statistical data.

The survey used 224 participants from various population strata as its sample size. Complete confidentiality of the informations was certified.

The total population of Mangalore Taluka is 994,602 out of which urban population is 784,569 while rural is 210,033. The members of our sample population were residents in rural areas. All aspects of society were represented in our sample population, including various income levels, occupational groups, and age groups under 30.

Acceptance and adoption of digital financial inclusion by the rural population of India: A case study

Statistical Analysis

The data input in Microsoft Excel were analysed using the Statistical Package for Social Sciences (SPSS) version 16 to ascertain the correlation between knowledge of digital payments. Calculations were done for descriptive statistical metrics such percentage, cumulative percentage, and ad frequency. The data were subsequently studied to establish the association between awareness and other traits. An inferential statistical test, such as the Chi square test, was used. At an error of 5%, differences were considered statistically significant. Regression was used to further analyze the data.

Empirical Results

Use of Regression

Table No 1

a. Age group and those using digital payments are significant

b. Age group and those who do not use digital payments are not significant.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.186[a]	.034	.030	.321	2.146

a. Predictors: (Constant), Age

b. Dependent Variable: Digital

R-value represents the correlation between the dependent and independent variable. A value greater than 0.4 is taken for further analysis. In this case, the value is .186, which is good. R-square shows the total variation for the dependent variable that could be explained by the independent variables. A value greater than 0.5 shows that the model is effective enough to determine the relationship. In this case, the value is .034, which is not good. Adjusted R-square shows the generalization of the results i.e. the variation of the sample results from the population in multiple regression. It is required to have a difference between R-square and Adjusted R-square minimum. In this case, the value is .030, which is not far off from .034, so it is good and satisfied. Therefore, the model summary table is satisfactory.

Table No 2

a. Age and the terms of financial inclusion and steps by RBI towards financial inclusion are significant

b. Age and the terms of financial inclusion and steps by RBI towards financial inclusion are not significant.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.056[a]	.003	-.001	.468	1.906

a. Predictors: (Constant), Age

b. Dependent Variable: Inclusion

R-value represents the correlation between the dependent and independent variable. A value greater than 0.4 is taken for further analysis. In this case, the value is .056, which is not good. R-square shows the total variation for the dependent variable that could be explained by the independent variables. A value greater than 0.5 shows that the model is effective enough to determine the relationship. In this case, the value is .003, which it is not good. Adjusted R-square shows the generalization of the results i.e., the variation of the sample results from the population in multiple regression. It is required to have a difference between R-square and Adjusted R-square minimum. In this case, the value is .-001, which is not far off from .003. So it is good. Therefore, the model summary table is not satisfactory to proceed with next.

Table No 3
a. Age and successful online banking that meets expectations are important.
b. Age and successfully finished online banking are not significant factors.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.042[a]	.002	-.003	.415	1.743

a. Predictors: (Constant), Age

b. Dependent Variable: Expectation

R-value represents the correlation between the dependent and independent variable. A value greater than 0.4 is taken for further analysis. In this case, the value is .42, which is good. R-square shows the total variation for the dependent variable that could be explained by the independent variables. A value greater than 0.5 shows that the model is effective enough to determine the relationship. In this case, the value is .002, which is not good. Adjusted R-square shows the generalization of the results i.e., the variation of the sample results from the population in multiple regression. It is required to have a difference between R-square and Adjusted R-square minimum. In this case, the value is .-.003, which is not far off from .002, so it is not good .Therefore, the model summary table is not satisfactory.

Table No 4
a. Designation and getting online banking services are significant
b. Designation and getting online banking services are not significant

Acceptance and adoption of digital financial inclusion by the rural population of India: A case study

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.126[a]	.016	.012	2.096	1.562

a. Predictors: (Constant), Designation

b. Dependent Variable: Online

Interpretation

R-value represents the correlation between the dependent and independent variable. A value greater than 0.4 is taken for further analysis. In this case, the value is .126, which is good. R-square shows the total variation for the dependent variable that could be explained by the independent variables. A value greater than 0.5 shows that the model is effective enough to determine the relationship. In this case, the value is .016, which is not good. Adjusted R-square shows the generalization of the results i.e., the variation of the sample results from the population in multiple regression. It is required to have a difference between R-square and Adjusted R-square minimum. In this case, the value is..012, which is not far off from .016, so, it is good.

Therefore, the model summary table is satisfactory.

Use of T-test

Table No 5

a**.** Age and how frequently people use digital payments are significant.

b. Age and how frequently you use digital payments are not significant.

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Payment	Male	110	4.04	1.116	.106
	Female	114	3.74	1.212	.114

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Payment	Equal variances assumed	3.014	.084	1.922	222	.056	.300	.156	-.008	.607
	Equal variances not assumed			1.924	221.520	.056	.300	.156	-.007	.606

167

Interpretation

The first subsection of group statistics includes the sample size (n) mean, standard deviation, and standard error of digital payment, among other basic data on group comparisons. This group consists of 114 Women and 110 Men. For men, digital payment has a mean of 4.04, and for women, it is 3.74.

The test results for Levene's Test for Equality of Variance, where F is the statistic of Levin's test and sig, are presented in this section. is the p value that this test statistics matching to. The p- value for the test in Levene's test is 0.056. We reject the null hypothesis of Levene's test since the p value is so low and come to the conclusion that there is heterogeneity in the problem faced by male respondents who use digital payment. If the test result hadn't been significant, that is, if p>alpha had been seen; we would have used the Equal variance assumption.

The results of the T-test to determine whether the means are equal are given for the real independent samples. Male is having an average trouble with digital payments (4.04-3.74=0.3). The sign of the t values and the mean difference are same. The positive t value of female users of digital payments are significantly higher than that of male users. Since 0.056 is smaller than the significance level we chose, 0.05, we can reject out the null hypothesis.

Table No 6
a. Gender and Bank aim to serve customers via all available sales channel are significant
b. Gender and Bank aim to serve customers via all available sales channel are not significant

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Service	Male	110	3.95	.975	.093
	Female	114	3.83	.940	.088

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
							Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)			Lower	Upper
Service	Equal variances assumed	.225	.636	.876	222	.382	.112	.128	-.140	.364
	Equal variances not assumed			.876	220.832	.382	.112	.128	-.140	.364

Acceptance and adoption of digital financial inclusion by the rural population of India: A case study

The first subsection of group statistics includes the sample size (n) mean, standard deviation, and standard error of digital payment, among other basic data on group comparisons. This group consists of 114 Women and 110 Men. For men, digital payment has a mean of 3.95, and for women, it is 3.83. In this section, the test results for Levene's Test for Equality of Variance where F is the test statistic and sig—are shown. is the p value to which this test statistic corresponds. The test in Levene's test has a p-value of 0.382. We conclude that there is heterogeneity in the problem experienced by male respondents who were satisfied with the services provided by the bank and reject the null hypothesis of Levene's test because the p value is so low. The Equal variance assumption would have been applied if the test result had not been significant, i.e., if p>alpha had been observed.

For the actual independent samples, the T-test results are provided to show whether the means are equal. Male is experiencing difficulties with bank service (3.95-3.83=0.12). The mean difference and the t values, sign is both the same. The positive t value of female customers who were satisfied with the bank's services is noticeably higher than that of male users. We can rule out the null hypothesis because 0.382 is less than the 0.05 significance level that we selected.

Uses of Correlation
Table No 7
   a. Age and Bank sell a product or service that is time constrained are significant
   b. Age and Bank sell a product or service that is time constrained are not significant

Correlations

		Time	Age
Time	Pearson Correlation	1	-.033
	Sig. (2-tailed)		.620
	N	224	224
Age	Pearson Correlation	-.033	1
	Sig. (2-tailed)	.620	
	N	224	224

Interpretation:
The study shows that here the Pearson correlation is negative correlation between age and time because Pearson correlation values is Less than 1 here value is -0.33. Here significant value is 0.620 which is more than alpha value 0.05 therefore it was not significant. It shows that dependent variable time and independent variable age is not significant as well as there is negative correlation

Table No 8
a. Designation and Rank of the services which provided by the bank are significant
b. Designation and Rank of the services which provided by the bank are not significant

Correlations

		Designation	Rank
Designation	Pearson Correlation	1	-.032
	Sig. (2-tailed)		.636
	N	224	224
Rank	Pearson Correlation	-.032	1
	Sig. (2-tailed)	.636	
	N	224	224

Interpretation

The study shows that here the Pearson correlation is negative correlation between age and time because Pearson correlation values is Less than 1 here value is -0.32. Here significant value is 0.636 which is more than alpha value 0.05 therefore it was not significant. It shows that dependent variable Rank and independent variable Designation is not significant as well as there is negative correlation.

Use of Chi-square

Table No 9

a. Age and Bank maintain the bank website are significant
b. Age and Bank maintain the bank website are not significant

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.561[a]	3	.056
Likelihood Ratio	5.703	3	.127
Linear-by-Linear Association	1.917	1	.166
N of Valid Cases	224		

a. 3 cells (37.5%) have expected count less than 5. The minimum expected count is .84.

Interpretation:

The chi square statistic appears in the Value column immediately to the right of "Pearson Chi-Square". In this example, the value of the chi square statistic is 7.561. The p-value (.056) appears in the same row in the "Asymptotic Significance (2-sided)" Column. The result is significant if this value is equal to or less than the designated alpha Level (normally .05). In this case, the p-value is Less than the standard alpha value, so the Result is significant – the data suggests that the variables age and bank maintain website.

Acceptance and adoption of digital financial inclusion by the rural population of India: A case study

Table No 10
a. Gender and Online banking provide better services than traditional Banking are significant
b. Gender and Online banking provide better services than traditional banking is not significant

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.710[a]	1	.054
Continuity Correction	3.080	1	.079
Likelihood Ratio	3.757	1	.053
Fisher's Exact Test			
Linear-by-Linear Association	3.693	1	.055
N of Valid Cases	224		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 20.63.

b. Computed only for a 2x2 table

The chi square statistic can be found directly to the right of "Pearson Chi-Square" in the Value column. The chi square statistic in this instance has a value of 7. The same row's "Asymptotic Significance (2-sided)" Column contains the p-value (.054). If this value is the same as or less than the selected alpha Level, the result is significant (normally .05). The data indicates that the variables age and bank maintain website since the p-value in this instance is less than the typical alpha value, which means that the result is significant.

Table No 11
a. Designation and purposes to go to Bank are Significant
b. Designation and purposes to go to bank are not significant

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.498[a]	10	.486
Likelihood Ratio	9.919	10	.448
Linear-by-Linear Association	1.963	1	.161
N of Valid Cases	224		

a. 8 cells (44.4%) have expected count less than 5. The minimum expected count is .50.

Sharan Kumar Shetty, Ramona Birau, Petre Valeriu Ninulescu, Robert Dorin Filip, Gabriela Ana Maria Lupu (Filip)

Interpretation

The chi square statistic appears in the Value column immediately to the right of "Pearson Chi-Square". In this example, the value of the chi square statistic is 9.498. The p-value (.486) appears in the same row in the "Asymptotic Significance (2-sided)" Column. The result is significant if this value is equal to or less than the designated alpha Level (normally .05). In this case, the p-value is Less than the standard alpha value, so the Result is not significant – the data suggests that the variables designation and purposes to go to bank.

Discussion

The results of the survey, there are significantly more female respondents than male respondents. Most of the respondents are employed and between the ages of 20 and 30. It shows that most females choose digital payments since they can finish transactions quickly despite having busy schedules. The majority of the 183 respondents who have bank accounts are familiar with digital payments. The majority of respondents visit the bank because they don't feel confident making this digital payment yet since they don't trust the Internet and the alleged security risks. The majority of people said that online banking offers outstanding service than traditional banking since it gives you access to your account history and transactions from anywhere. The majority of respondents prefer online money transfers because there is no paperwork involved or because they are available around-the-clock. It is simple and effective. People choose it because money is transferred from one account to another very quickly. The majority of respondents selected customer service as their top priority because it helps banks build positive reputations, lower customer complaints, and increase sales. In the use of regression for the variables Age group and those using digital payments are significant and satisfactory. Using regression for the variables Age and the number of bank account holders are significant considerations. For further anlysis using chi-square the positive t value of female users of digital payments are significantly higher than that of male users. Since 0.056 is smaller than the significance level we chose, 0.05, we can reject out the null hypothesis. So, it is not satisfactory. In the use of correlation, it shows that dependent variable time and independent variable age is not significant as well as there is negative correlation. Using correlation, it shows that dependent variable Rank and independent variable Designation is not significant as well as there is negative correlation. In the use of T-test the positive t value of female users of digital payments are significantly higher than that of male users. Since 0.056 is smaller than the significance level we chose, 0.05, we can reject out the null hypothesis. Using t-test the positive t value of female customers who were satisfied with the bank's services is noticeably higher than that of male users. We can rule out the null hypothesis because 0.382 is less than the 0.05 significance level that we selected.

This study shows that people are aware of digital banking, which allows them to complete them tasks quickly and efficiently without having to visit a bank. To encourage customers of online banking to do a big volume of transactions, the bank should implement new rules and incentives. The technical and physical accessibility of online banking services should be improved by the bank. Bank customers who are men must take the necessary procedures in order to use online banking services. The bank needs to offer more services including training programmes and awareness raising events to all kinds of customers. To collect online bill payment premiums and other finance-related matters, banks should work with other financial institutions. For those who are unsure of

how to use online banking services very effectively, the bank should provide an easy approach to access those services. The bank should enhance the quality of its home page, server availability, and online banking services. There is still more to be done to raise public knowledge of the existence of digital banking products and services, as well as their features and advantages. Banks should host open exhibits and lecture presentations, and they should make their products available to all customers.

Conclusions

This study reveals how demographic factors including age, gender, designation, and income have an impact on digital payments. Banks will be able to operate more successful and profitable because of mobile devices. People who don't have time to visit a bank can use mobile banking to do tasks quickly in their busy schedules. People who don't have time to visit a bank can use mobile banking to do tasks quickly in their busy schedules. Digital and mobile technology are reaching more and more areas of society, business, and personal life. Digital finance is essential to peoples' daily lives. The study's findings revealed that usability, convenience, accuracy of timing, and ease of interbank account facilities had favorable effects on mobile banking. Low service fees, accuracy of timing, and low service fees have beneficial effects on internet banking (apps). Thus, the study's results indicate mobile banking significantly affects financial inclusion. All people want to use digital finance in some capacity in their daily lives. The proportion of participants either fully or partially understand digital banking. In terms of frequency of use, digital banking services are the most popular option, followed by ATM, Internet banking, mobile banking, and various mobile apps. According to the benefits, time savings is the biggest advantage, followed by simple processing, affordable, and simple fund transfers, bill payments, etc. Some of the respondents had accounts with various banks, and they have been using the institutions; digital banking services. Many commercials have a significant impact on people's awareness of digital banking technologies, their use, and likelihood to utilize them in the future.

Authors' Contributions:
The authors contributed equally to this work.

References:
Akhter, U., Anwar, S. R., Mustafa, R., & Ali, Z. (2021). Revisiting the impact of mobile banking on financial inclusion among the developing countries. International Journal of Financial Research, 12(2), 62-74.

Blaise, N., & Kosgei, F. (2021). Mobile banking and financial inclusion in Burundi. IOSR Journal of Economics and Finance (IOSR-JEF), 12(2), 60-68.

Bakari., I. H., Donga, M., Adamu, I., Hedima, J. H., Kasima, W., Hajara, B., & Yusrah, I. (2019). An examination of the impact of financial inclusion on poverty reduction: an empirical evidence from sub saharan Africa. International Journal of Scientific and Research Publications, 9(1), 239–252.

Inoue, T. (2019). Financial inclusion and poverty reduction in India. Journal of Financial Economic Policy, 11(1), 21–33.

Koomson, I., Villano, R. A., & Hadley, D. (2020). Effect of financial inclusion on poverty and vulnerability to poverty: Evidence using a multidimensional measure of financial inclusion. Social Indicators Research, 149(1), 613–639.

Omar, M. A., & Inaba, K. (2020). Does financial inclusion reduce poverty and income inequality in developing countries? A panel data analysis. Journal of Economic Structures, 9(37), 1–25.

Samartha, V., Shenoy Basthikar, S., Hawaldar, I.T., Spulbar, C., Birau, R., & Filip, R.D. (2022) A Study on the Acceptance of Mobile-Banking Applications in India - Unified Theory of Acceptance and Sustainable Use of Technology Model (UTAUT), Sustainability, 14(21): 14506. https://doi.org/10.3390/su142114506.

Spulbar, C., Anghel, L.C., Birau, R., Ermiş, S.I., Treapăt, L.-M., Mitroi, A.T. (2022) Digitalization as a Factor in Reducing Poverty and Its Implications in the Context of the COVID-19 Pandemic. Sustainability. 2022; 14(17):10667. https://doi.org/10.3390/ su141710667.

Ullal, M. S., Nayak, P. M., Dais, R. T., Spulbar, C., & Birau, R. (2022). Investigating the nexus between Artificial Intelligence and machine learning technologies in the case of Indian services industry. Business: Theory and Practice, 23(2), 323–333. https://doi.org/ 10.3846/btp.2022.15366.

Wakaba, V., & Wepukhulu, J. M. (2019). Effect of mobile money services on Kenya's financial inclusion. International Journal of Finance and Accounting, 4(2), 1-18.

QUESTIONNAIRE

1. Name: ---

2. 20-30
   - 30-40
   - 40-50
   - 50 & above

3. Designation:
   - Student
   - Employed
   - Other

4. Gender:
   - Male
   - Female

5. Annual Income
   - Below 15000
   - 15000-25000
   - 25000-50000
   - 50000-75000
   - 75000-100000
   - More than 100000

6. Are you working in Bank?
   - Yes
   - No

7. Is your household having a Bank Account?
- Yes
- No

8. In how many Banks do you have an account?
- 1
- 2
- 3
- More than 4

9. Does a bank sell a product or service that is time constrained?
- Yes
- No

10. Does your Bank aim to serve customers via all available sales channel?
- Yes
- No

11. Is your Bank have a Transaction Tracking System?
- Yes
- No

12. Have you heard of the terms Financial Inclusion and steps by RBI towards financial Inclusion?
- Yes
- No

13. Are you using the latest Gadgets such as PDA's, two way pagers and mobile phones?
- Yes
- No

14. Is the Bank A/C with a Cheque Book?
- Yes
- No

15. For what purposes do you go to Bank?
- Saving/Current Account Operation
- Locker Operation
- Loans
- Savings Schemes
- Tax Schemes
- Investment Plans

16. Do you use Digital Payment?
- Yes
- No

17. How often do you use Digital Payment?
- Very often
- Often
- Sometimes
- Rarely

-        Never

18. Are you satisfied with service of your Bank?
-        Highly Satisfied
-        Satisfied
-        Neutral
-        Dissatisfied
-        Highly Dissatisfied

19. Does online banking provides better services than traditional Banking.
-        Yes
-        No

20. What kind of services are you getting in online Banking?
-        Online bill payment
-        Online Money Transfer
-        Online Bookings
-        Online Pay Roll Direct Deposit
-        Mobile recharge
-        International Payments
-        Online Purchase
-        Other

21. Is your Bank maintain the Bank Website?
-        Yes
-        No

22. Is the security always updated to protect any theft fraudulent?
-        Yes
-        No

23. Is Online banking well fitted in your long-term strategy?
-        Yes
-        No

24. Did online Banking done well according to your expectations?
-        Yes
-        No

25. Give the Rank of the services which provided by your Bank?
-        Personalized service
-        Wide Branch Networking
-        Customer service
-        Core Banking
-        Computerized Banking
-        Problem Solving

**Acceptance and adoption of digital financial inclusion by the rural population of India:
A case study**

An interdisciplinary approach to sustainable agricultural finance and its impact on Indian farmers behaviour

6 authors, including:

Spulbar Cristi
University of Craiova
211 PUBLICATIONS **1,484** CITATIONS

SEE PROFILE

Ramona Birau
University of Craiova
231 PUBLICATIONS **1,408** CITATIONS

SEE PROFILE

Iqbal Thonse Hawaldar
The Kingdom University
186 PUBLICATIONS **2,356** CITATIONS

SEE PROFILE

Jatin Trivedi
National Institute of Securities Markets
47 PUBLICATIONS **293** CITATIONS

SEE PROFILE

An interdisciplinary approach to sustainable agricultural finance and its impact on Indian farmers behaviour

Sharan Kumar SHETTY
Manel Srinivas Nayak Institute of Management, Mangaluru,
India, Email: sharansai25@gmail.com

Iqbal Thonse HAWALDAR
Department of Accounting &Finance, College of Business Administration, Kingdom University,
Sanad, Bahrain
Email: i.hawaldar@ku.edu.bh

Cristi SPULBAR
Faculty of Economics and Business Administration, University of Craiova, Romania,
Email: cristi_spulbar@yahoo.com

Ramona BIRAU
C-tin Brancusi University of Targu Jiu, Faculty of Education Science, Law and Public
Administration, Romania
Email: ramona.f.birau@gmail.com

Cristian REBEGEA
University of Craiova, Faculty of Economics and Business Administration, Craiova, Romania
Email: cristian.rebegea@brd.ro

Jatin TRIVEDI
Associate Professor, National Institute of Securities Markets, India
Email: contact.tjatin@gmail.com

Abstract

Agriculture should no longer be isolated because it is such a significant sector in India. Agriculture dominates the economy in Karnataka, India. Farmers that are 18 to 20 years old are actively involved in farming. Farmers, on average, have committed suicide between the ages of 35 and 45 all across India. Non-availability of credit, inferior inputs, and non-availability of extension services are among the causal factors. Amounts owed on bank and private loans have accumulated. They sell all of their gold and take out loans on all of their properties. When their children are grown and the question of their marriage arises at the ages of 35, 40, and 45, they believe there is little chance to address the vital family situation. Farmers are despised in society, have no fixed income or sufficient money, and do not work full-time. Unemployment and underemployment are common, and most people are forced to migrate as a result of starvation, drought, floods, and other natural disasters. Institutional lending and credit have been drastically cut. Farmers are forced to rely on money lenders and their indebtedness forces them to sell their products at a loss. As a result, they are unable to return the debt on time. Farmers approach banks and cannot get a loan from the bank for the mere reason of holding small size of land and hence they approach moneylenders and take money at a higher rate of interest and suffer. The current study is finding out the probable reasons for these gaps in the agricultural financial systems.

Keywords: Agriculture, Farm activities, Banking sector, RBI, Financial system, Agricultural loans, Unemployment, Sustainable development

1. Introduction

Agricultural financial policies play an important role in streamlining India's agriculture. For instance, Kumar et al. (2021) revealed that India is the second largest consumer, but also the fourth largest producer of natural rubber in the world. Institutional credit was designed to play a significant part in India's agricultural development. The disbursement of loans to agriculture involves a significant number of institutional bodies. Money lenders' continued presence in the rural loan sector, however, is a key source of concern. Financial institutions play an essential role in mobilizing savings and channeling them into productive economic activities. As a result, financial institutions also play a critical role in the development of any sector, including agriculture. In India, a financial organization for agriculture was established with the goal of reducing the very high level of impoverishment of farmers and providing them with the tools they need to improve their farming productivity. NABARD was established as a result in the year 1982. Financial institutions for many sectors are accessible in India. Because the Indian economy is so enormous, each sector requires its own set of institutions. To over see the agriculture sector, the Indian government founded NABARD, or the National Bank for Agriculture and Rural Development. In India, there are several small agricultural finance institutions that assist and support farmers.

An interdisciplinary approach provides an innovative perspective on the research topic, so we examined the concept of agricultural finance in this context. Agriculture is the backbone of the Indian economy. It employs two-thirds of the population and provides food, clothing, fodder, and other fundamental essentials to the entire population (Hawaldar et al. 2020; Meher et al. 2020; Lokesha and Hawaldar, 2019; Lokesha et al. 2017). The importance of agricultural financing in a country's agricultural development cannot be overstated. In addition, Bhat (1999) investigated relevant aspects about agricultural borrowers from banks and the complex implications of this process. One of the reasons for the reduction in agriculture's economic contributions is a lack of a clear National Credit Policy and a scarcity of credit institutions that can help farmers. Agriculture financing is regarded as more than just another resource like labour, land, equipment, and raw materials. The profitability and stability of financial institutions are determined by the execution of loan contracts, and screening loan applications is a critical step in reducing credit risk. Credit analysis should be performed as part of the screening procedure before making any financial decisions. A loan would be issued to credit worthy borrowers with low credit risk, while a loan to a high-risk borrower would be denied. A good credit risk assessment can help financial institutions with loan pricing, credit limit determination, credit risk management, default risk reduction, and debt payback. Credit analysis is the most common strategy for lowering credit risk on a loan application. This includes determining the financial strength of the borrowers, estimating the probability of default and reducing the risk of non-payment to an acceptable level.

Agricultural finance's credit worthiness differs greatly from country to country. Agricultural finance is strongly linked to providing critical resources that farmers cannot obtain from their own accessible money in less developed countries. In this instance, one of the most essential government activities is to promote agricultural development through the supply of agricultural financing. In industrialized countries, however, it is an essential tool of production that provides the farmer with capital to obtain resources in a timely and cost-effective manner (Hawaldar et al., 2017a; 2017b; 2016a; 2016b). Institutional credit, which was critical to the development of the agricultural sector, was crucial to the growth of Indian agriculture. It exhibited characteristics of being resilient to natural disasters such as droughts and famines. In fact, credit has served as a tool of gaining control over resources, allowing farmers to get the capital needed to boost agricultural production.

It allowed farmers to obtain both short-term and long-term credit for the purchase of

inputs and other services, as well as long-term financing for investment. Credit has thus played a crucial role in enabling agricultural technical advancement and commercialization (Hawaldar et al. 2020; Meher et al. 2020; Lokesha and Hawaldar, 2019; Lokesha et al. 2017). Institutional credit support to the agricultural sector in terms of expanding inputs like fertilizers, irrigation, and private capital development was critical to the success of the Green Revolution in Indian agriculture. Farmers are being encouraged to make new investments and/or adopt new technology. The unique position of Indian agriculture in the macroeconomic framework, as well as its considerable significance in poverty alleviation, further emphasizes the relevance of agricultural finance. Recognizing the importance of agricultural finance in promoting agricultural growth and development, one of the most important crucial inputs for agricultural development is the institutional framework for agricultural finance. Since India's planned development era began, it has been emphasized.

How long is the road from physics to applied finance? There are linkages especially in the context of a fundamental technical perspective with implications on economy. Agricultural finances have a major impact on socio-economic development in India. Advanced knowledge of physics and mathematics can play a catalytic role in identifying effective solutions to achieve sustainable agricultural financing in India.

The research objectives of this empirical study are the following:

1. To study the current financial support given by the bank or financial institutions.

2. To understand the problem faced by the farmers in availing the facilities given by the bank \ financial institution.

3. To find possible solution in order to minimize the problem faced by the farmer.

2. Literature review

Prasad (1969) categorized the causes responsible for variations in the investment pattern into internal and external components in his paper, "Capital Investment in Agriculture-A Study in Regional Variations." Internal determinants included cropping patterns, type of farming, resource location, and the cultivator's progressive tendency, all of which are under the individual's control. External variables are those that provide individuals with opportunity or the required infrastructure to invest cash in agriculture, such as the development of irrigation projects and the provision of low cost finance.

Singh (2003) has examined in his article "Banks: Look Before You Leep", the performance of banks on the basis of different conventional and modem criteria that include parameters like operational efficiency, capital adequacy, earning quality, assets quality, management quality, liquidity etc. and some other operating and financial ratios as modem techniques for evaluating the banks performance.

Devaraja (2011) examined the credit challenges in the country considering that India is an emerging economy. According to the findings, credit to the agriculture industry continues to be insufficient. An examination of the state of agriculture credit reveals that financing to the sector remains insufficient. The banking system appears to be still reticent to lend to small and marginal farmers for a variety of reasons.

Mishra and Mohapatra (2017) developed the study "Agriculture finance in India" according to their research. It was discovered that for the previous four decades, institutional credit to agriculture has been rising. In recent years, the structure of credit sources has shifted dramatically, with commercial banks emerging as the most important source of Institutional credit to agriculture. Providing borrowers with training on the procedural formalities of financial institutions could help them gain access to Institutional credit (Hawaldar et al., 2017a; 2017b; 2016a; 2016b).

Zwart and Blandford (1989) examined the linkage between international price stability and domestic agricultural policies, while concluding that increasing volatility represent a

significant distress for agricultural producers. Moreover, Hawaldar et al. (2019) argued that for the Indian customers there is a strong connection between marked price and quality.

3. Research methodology

The descriptive research approach was used to attain the study goal. The material needed to complete the study's goal was gathered from a variety of primary and secondary sources. This is a descriptive study. It aids in the division of a large problem into smaller, more specific problems and stresses the discovery of fresh ideas and insights. The term "sample" refers to the group or portion of the population chosen for the study. Customers ofthe selected Primary Agriculture Credit Co-operative Society Limited KADABA are included in the sample for the study. Customers of PACS Bank Ltd are likely to be among the responders.

Number of sample units are selected from the universe to form a sample is called sample size. 100 respondents are taken for testing the relevance of customer preference in availing loan facility with special reference to PACS Bank. The random sampling technique was adopted to select the respondents for the study purpose. Questionnaire method was used to collect the data. There were two parts in the Questionnaire Part A: Respondents profile, Part B: Conceptual questions.

For the objective of this research, both primary and secondary data were collected. Data acquired for the first time is referred to as primary data. Questionnaires were used together primary data for this investigation. The purpose of the study guided the development of this questionnaire. There are open-ended and closed-ended questions in the questionnaire. Secondary data used includes journals, magazines, internet websites, textbooks and literature survey. These are the data already collected by someone else for his purpose, is utilized by the investigator for his purpose.

4. Empirical results

The sample size (n), mean, SD, and standard error for the difficulty experienced by the farmers when they applied for the loan are all provided by group statistics. Unmarried farmers make up 5 percent of the total, while married farmers make up 95 percent. Unmarried farmers have a 2.8000 problem, whereas married farmers have a 2.3053 problem when it comes to getting a loan. This section contains the test results for Levine's Test for Equality of Variance, where F is the statistic of Levine's test and Sig. is the p value corresponding to this test statistic. The test's p-value the p-value for Levine's test is 0.281. Because the p value is so small, we reject the null hypothesis of Levine's test and conclude that the variation in problem experienced by farmers who take out loans for cultivating agriculture is significantly different from that of unmarried farmers. We would have utilised the Equal variance assumption if the test result had not been significant, that is, if p > alpha had been observed. The result of the T-test for Equality of Means is provided for the actual independent samples. The mean problem faced by farmers seeking loan facilities for unmarried farmers was deducted from the t test for married farmers seeking loan facilities (2.8000 - 2.3053 =0.49474). The t value's sign matches to the sign of the mean difference. Married farmers have a substantially higher positive t value than unmarried farmers. We can reject the null hypothesis since p 0.281 is less than our selected significant level alpha = 0.05.

Table 1. T test - Years of farming agriculture

Group Statistics					
	Gender	N	Mean	Std. Deviation	Std. Error Mean
How many years have you been farming in agriculture	male	81	2.2469	.69876	.07764
	female	19	2.0526	.77986	.17891

Independent Samples Test									
		Levine's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
How many years have you been farming in agriculture	Equal variance assumed	.001	.973	1.067	98	.289	.19428	.18209	-.16707	.55564
	Equal variances not assumed			.996	25.217	.329	.19428	.19503	-.20722	.59579

Source: Data collected from primary data and computation of data completed by the help of SPSS.

Table 2. T test - Problem faced by the farmers at the time of availing the loan facility

Group Statistics					
	Marital status	N	Mean	Std. Deviation	Std. Error Mean
Problem faced by the farmers at the time of availing the loan facility	single	5	2.8000	1.64317	.73485
	married	95	2.3053	.95732	.09822

Independent Samples Test

		Levine's Test for Equality of Variances		t-test for Equality of Means						
						Sig.(2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
		F	Sig.	T	Df				Lower	Upper
Problem faced by the farmers at the time of availing the loan facility	Equal variances assumed	7.401	.008	1.084	98	.281	.49474	.45636	-.4109	1.40037
	Equal variances not assumed			.667	4.144	.540	.49474	.74138	-1.5357	2.52521

Source: Data collected from primary data and computation of data completed by the help of SPSS.

Table 3. Chi – square test

Rules and regulation of financial institution

Case Processing Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Gender * Financial institution's rules and regulations are	100	100.0%	0	.0%	100	100.0%

Gender * Financial institution's rules and regulations are Cross tabulation						
			Financial institution's rules and regulations are			
			Flexible	moderate	rigid	Total
Gender	male	Count	6	47	28	81
		Expected Count	7.3	43.7	30.0	81.0
		% Within Gender	7.4%	58.0%	34.6%	100.0%
	female	Count	3	7	9	19
		Expected Count	1.7	10.3	7.0	19.0
		% WithinGender	15.8%	36.8%	47.4%	100.0%
Total		Count	9	54	37	100
		Expected Count	9.0	54.0	37.0	100.0
		% WithinGender	9.0%	54.0%	37.0%	100.0%

Chi-SquareTests			
	Value	df	Asp. Sig.(2-sided)
Pearson Chi-Square	3.162a	2	.206
Likelihood Ratio	3.079	2	.214
Linear-by-Linear Association	.078	1	.780
N of Valid Cases	100		
a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is 1.71.			

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	.178	.206
	Cramer's V	.178	.206
N of Valid Cases		100	

Source: Data collected from primary data and computation of data completed by the help of SPSS.

Interpretation:
The first table is a summary of case processing; it informs us how many valid cases were used for analysis. Only examples with non-missing data for both financial institution rules and regulation and gender can be considered in the test.

The individual chi–square is the result of chi – square tests tables. The test statistic has a value of 3.162. The statistic refers to the expected cell count assumption (anticipated cell counts are all larger than 5), which was met because no cells had an expected count less than 5. The degree of freedom (df) for the test statistic is 2 because it is based on a 3 into 2 cross tabulation table. p = 0.206 is the test statistic's matching p-value. We do not reject the null hypothesis because the p-value is higher than the significant level we specified (alpha = 0.05). Instead, we conclude that there is insufficient data to show a link between gender and financial institution laws and regulation.

Table 4. Chi – square test

Financial support from the bank

Case Processing Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Gender* What kind of financial support the bank is providing you	100	100.0%	0	.0%	100	100.0%

Gender *What kind of financial support the bank is providing you Cross tabulation						
			What kind of financial support the bank isproviding you			Total
			Loan	debit and credit card	insurance	
Gender	Male	Count	34	34	13	81
		Expected Count	34.8	32.4	13.8	81.0
		% Within Gender	42.0%	42.0%	16.0%	100.0%
	female	Count	9	6	4	19
		Expected Count	8.2	7.6	3.2	19.0
		% Within Gender	47.4%	31.6%	21.1%	100.0%
Total		Count	43	40	17	100
		Expected Count	43.0	40.0	17.0	100.0
		% Within Gender	43.0%	40.0%	17.0%	100.0%

Chi-Square Tests			
	Value	df	Asp. Sig.(2-sided)
Pearson Chi-Square	.747[a]	2	.688
Likelihood Ratio	.757	2	.685
Linear-by-Linear Association	.000	1	.983
N of Valid Cases	100		
a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is 3.23.			

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	.086	.688
	Cramer's V	.086	.688
N of Valid Cases		100	

Source: Data collected from primary data and computation of data completed by the help of SPSS.

Interpretation:

The case processing summary is the first table, and it shows us how many valid cases were used in the analysis. The test can only be used to situations that have non-missing values for bank financial assistance and gender. The person chi-square is the result of chi-square tests tables. This test statistic has a value of 0.747. The statistic refers to the expected cell count assumption (all expected cell counts are larger than 5), which was satisfied because no cells had an expected countless than 5. The degrees of freedom (df) for the test statistic are 2 because it is based on a 3 into 2 cross tabulation table. The test statistic's matching p – value is p = 0.688. We do not reject the null hypothesis because the p – value is greater than our chosen significant level (alpha = 0.05). Rather, we conclude that there is insufficient data to show a link between gender and bank financial support.

Table 5. Regression

Numbers of years account in bank

Descriptive Statistics			
	Mean	Std. Deviation	N
How many years do you have an account in bank	2.1100	.61783	100
Education Qualification	1.9700	.88140	100

Correlations			
		How many years do you have an account in bank	Education Qualification
Pearson Correlation	How many years do you have an account in bank	1.000	-.050
	Education Qualification	-.050	1.000
Sig. (1-tailed)	How many years do you have an account in bank	.	.312
	Education Qualification	.312	.
N	How many years do you have an account in bank	100	100
	Education Qualification	100	100

Variables Entered/Removed			
Model	Variables Entered	Variables Removed	Method
1	Education Qualification	.	Enter

All requested variables entered

b. Dependent Variable: How many years do you have an account in bank

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.050a	.002	-.008	.62021

a. Predictors: (Constant), Education Qualification

b. Dependent Variable: How many years do you have an account in bank

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.093	1	.093	.241	.625a
	Residual	37.697	98	.385		
	Total	37.790	99			

a. Predictors: (Constant), Education Qualification

b. Dependent Variable: How many years do you have an account in bank

Coefficients								
		Unstandardized Coefficients		Standardized Coefficients			95% Confidence Interval for B	
Model		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	2.178	.153		14.284	.000	1.876	2.481
	Education Qualification	-.035	.071	-.050	-.491	.625	-.175	.106

a. Dependent Variable: How many years do you have an account in bank

Residuals Statistics					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.0048	2.1437	2.1100	.03060	100
Residual	-1.14367	.96047	.00000	.61707	100
Std. Predicted Value	-3.438	1.101	.000	1.000	100
Std. Residual	-1.844	1.549	.000	.995	100
a. Dependent Variable: How many years do you have an account in bank					

Source: Data collected from primary data and computation of data completed by the help of SPSS.

Interpretation:

The R and R square values can be seen in the model summary table. The R number denotes a straight forward correlation, and 0.50 R denotes a high level of correlation. The R square value reflects how much the independent variable, number of years in bank, can explain the overall variation in the dependent variable educational qualification. The regression model predicts the dependent variable significantly well, according to the ANOVA table. Go to the Sig. Column on the regression row. This represents the regression model's statistical significance. In this case, p 0.625 is less than 0.05, indicating that the regression model statistically significantly predicts the result variable. The coefficient table gives us the information we need to estimate price based on educational credentials and to see if the number of years an account has been open at a bank contributes statistically to the model.

Table 6. Regression

Knowledge about the financial sources

Descriptive Statistics			
	Mean	Std. Deviation	N
In what way do you have knowledge about the financial sources	2.0700	.97706	100
Education Qualification	1.9700	.88140	100
Correlations			

		In what way do you have knowledge about the financial sources	Education Qualification
Pearson Correlation	In what way do you have knowledge about the financial sources	1.000	-.103
	Education Qualification	-.103	1.000
Sig. (1-tailed)	In what way do you have knowledge about the financial sources	.	.154
	Education Qualification	.154	.
N	In what way do you have knowledge about the financial sources	100	100
	Education Qualification	100	100

Variables Entered/Removed			
Model	Variables Entered	Variables Removed	Method
1	Education Qualification	.	Enter
All requested variables entered.			
b. Dependent Variable: In what way do you have knowledge about the financial sources			

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.103[a]	.011	.001	.97680
a. Predictors: (Constant), Education Qualification				
b. Dependent Variable: In what way do you have knowledge about the financial sources				

Residuals Statistics

	Minimum	Maximum	Mean	Std.Deviation	N
Predicted Value	1.7237	2.1809	2.0700	.10073	100
Residual	-1.18086	2.04772	.00000	.97185	100
Std. PredictedValue	-3.438	1.101	.000	1.000	100
Std. Residual	-1.209	2.096	.000	.995	100
a. Dependent Variable: In what way do you have knowledge about the financial sources					

Source: Data collected from primary data and computation of data completed by the help of SPSS.

ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.005	1	1.005	1.053	.307a
	Residual	93.505	98	.954		
	Total	94.510	99			
a. Predictors: (Constant), Education Qualification						
b. Dependent Variable: In what way do you have knowledge about the financial sources						

1	(Constant)	2.295	.240			9.556	.000	1.819	2.772
	Education Qualification	-.114	.111		-.103	-1.026	.307	-.335	.107

Coefficients							
	B	Std. Error	Beta			Lower Bound	Upper Bound

Model	Unstandardized Coefficients	Standardized Coefficients		t	Sig.	95% Confidence Interval for B

Interpretation:

R and R square values can be found in the model summary table. The R value, 0.103 R, suggests a strong degree of association. The R square value denotes how much the independent variable, knowledge of financial sources, can explain the overall variation in the dependent variable educational qualification. The regression model significantly predicts the dependent variable, as seen by the ANOVA table. Navigate to the Sig. Column in the regression row. This value represents the regression model's statistical significance. The regression model statistically substantially predicts the outcome variable with p =0.307, which is less than 0.05.

4. Discussions

Majority of respondents neutrally agree that a farmer is not aware of the facility available and they have agreed that a farmer is no faith in schemes and institutions. Farmers have lack of educational knowledge about the agriculture finance. The possible solution to minimize farmers problems are improving agriculture facilities, reducing risk for taking loan, developing infrastructure, good climate condition, increasing loan amount, supporting farmers, generating employmen to pportunities etc.… Majority of respondents strongly agree that a farmer is not satisfied within demnity level. It can be observed that facilitates further loan is farmers overall opinion on loan waiving scheme. Majority of respondents agree that a farmer is faced difficulties in opening bank account and the farmer is faced loan has taken from sources other than banks. In the male (M =2.24, SD = 0.70) and female (M =2.05,SD =0.78) circumstances, there was a significant difference in the scores for years of agricultural agriculture, t(98)=1.067, p=0.29. Majority of respondents agree that a farmer is paying high interest rate form the bank. There was significant difference in the score for independent t test in problem faced for farmers at thetime of availing the loan facility for married and unmarried farmers. In married farmers are (M =2.31, SD =0.96) unmarried farmers are (M=2.80, SD=1.64) and condition int(98)=1.084, p=0.28. charetest of rules and regulation of financial institution. The relation between these variables was significant in Gender =x square (df=2, N= 100) = 3.162, p< =0.2..A chi- square test of financial support in bank where there is a relation between gender of male / females in x square (df= 2, N =100) =747, p<= 0.69.

Result of the regression indicate that there was a collective significant effect between the educational qualification of number of years account in bank model summary R value is 0.050 and r square value 0.002. and ANOVA model of regression 0.093, df=1, M square= 0.093 f= 0.241 and coefficients model of educational qualification in unstandardized coefficients b= 2.178, t =14.28.. Result of the regression indicate that there was a collective significant effect

between the educational qualification of knowledge about the financial sources of farmers in model summary R value is 0.103 and r square value 0.011. and ANOVA model of regression 1.005, df=1, M square=1.005f=1.053 and coefficients model of educational qualification in unstandardized coefficients b= 2.295, t =9.556.

Farmers must modify their mindset about loan forgiveness, as the majority of them anticipate the government to forgive their debt. From this study we understand that farmers must form an association and buy the latest technology and implement their cultivation Farmers should be aware of the many agricultural credit programmes available, while Government must regulate the banks for providing better agriculture finance. Government must provide fertilizers and seeds through government department without conditions from farmers. Government must maintain the river water on regular basis. Each bank must form its own team, which must be interested in and integrated with a special task force that includes contributions from all banks. Conduct campaign regarding agriculture loans to the farmers so that they can be aware and be updated with the new schemes. The bank should recommend that, in collaboration with other institutional organisations, they improve their sources and delay the distribution of funds to those who are in need.

5. Conclusions

Agriculture represents the core industry of India. Farmers are the most helpless victims of private money lenders, who are free to recover their debt by seizing the poor farmers' crops, as well as their personal items, land, and living quarters. Agricultural finance is identified both at the micro and macro level in India. However, the rural sector's available resource base and potential to generate adequate amounts of financial resources, notably in the agricultural sector, are now constrained. From this perspective, institutional funding is seen as a primary source of external funding that can be used to support a strategy. Institutional finance allows farmers to obtain the necessary production equipment and creates an environment that encourages increased productivity. Because institutional finance has a "push effect" and plays a catalytic role in the development process, providing enough, timely, and liberal financing to farmers has become a key component of India's agricultural development policy. As a result, agricultural finance is offered in the country via three main channels: commercial banks, including private sector banks in recent years, regional rural banks, and cooperatives. Farmers believe that banks do not provide timely financing and that sufficient funds are not sanctioned, based on the findings of this study. In this study area, special attention should be paid to timely provision of finance, which will promote greater growth in agriculture production as well as farmers' social situation.

References

[1] Bhat (1999) Agricultural Borrowers from Banks – A Profile and Policy Implications, Financing Agriculture, 27 (2).

[2] Devaraja, T.S. (2011) Rural Credit in India - An Overview of History and Perspectives, - the work described in this working paper was substantially supported by a grant from the University Grants Commission of India, 1, http://www.sibresearch.org/uploads/2/7/9/9/2799227/ruralcredit-devaraja. pdf.

[3] Hawaldar, I. T., Spulbar, C. M., Lokesh, Birau, R., Rebegea, C. (2020). Analyzing Non-Performing Assets in Agricultural Loans: A Case Study of India. Revue des Sciences Politiques, 65, 42 -53. Available at SSRN: https://ssrn.com/abstract=3583303

[4] Hawaldar, I.T., Lokesh, Biso, S.S. (2016a). An Empirical Analysis of Financial Performance of Retail and Wholesale Islamic Banks in Bahrain." American Scientific Research Journal for Engineering, Technology, and Sciences (ASRJETS), 20 (1), 137-147.

[5] Hawaldar, I.T., Lokesha, K. A. Kumar, Pinto, P., Sison, S.M. (2017b). Performance Analysis of Commercial Banks in the Kingdom of Bahrain (2001-2015). International Journal of Economics and Financial Issues, 7(3), 729-737.

[6] Hawaldar, I.T., Pinto, P., Lokesha (2016b). An Empirical Analysis of Performance of Retail and Wholesale Conventional Banks in Bahrain, British Journal of Economics, Finance and Management Sciences, 12(1), 1-10.

[7] Hawaldar, I.T., Rahiman, H., Rajesha, T. M., Kumar, N. K.R. (2017a). A Comparison of Financial Performance of Islamic and Conventional Banks in Bahrain. American Scientific Research Journal for Engineering, Technology and Sciences (ASRJETS), 33 (1), 100-110.

[8] Hawaldar I.T., Ullal M.S., Birau F.R., Spulbar C.M. (2019) Trapping fake discounts as drivers of real revenues and their impact on consumer's behavior in India: A case study, Sustainability, 11, 1-20.

[9] Kumar, K.A., Pinto, P., Hawaldar, I.T., Spulbar, C., Birau, R. (2021) Crude oil futures to manage the price risk of natural rubber: Empirical evidence from India, Agricultural Economics, 67: 423–434, https://doi.org/10.17221/28/2021-AGRICECON, ISSN 0139-570X (Print), ISSN 1805-9295 (On-line).

[10] Lokesha, Hawaldar, I.T. (2019). Impact of Factors on the Utilization of Agricultural Credit of Banks: An Analysis from the Borrowers' Perspective. Banksand Bank Systems, 14(1), 181-192. doi:10.21511/bbs.14(1).2019.16.

[11] Lokesha, Hawaldar, I.T., Ishwara, P. (2017). An Evaluation of Pre- and Post-Sanction Process in Agricultural credit by Banks. International Journal of Economic Research, 14(14), 151-165.

[12] Prasad (1869) International Journal of Research in Commerce and Management - https://ijrcm.org.in/

[13] Meher, B.K., Puntambekar, G.L., Hawaldar, I.T., Spulbar, C., Birau, R., Rebegea, C. (2020). An Effectiveness Assessment of Preventive Management Strategies in order to Manage Non-Performing Assets in Indian banks: A Case Study. Scientific Annals of Economics and Business, 67 (2), 235-258.

[14] Mishra, A.K., Mohapatra, U. (2017). Agricultural Finance in India- an Overview. International journal of engineering sciences & research Technology, 6(8), 411-417.

[15] Singh, P. (2003) Banks: Look before You Leap, Asian Economic Review, 45, 2, 237- 246.

[16] Zwart A.C., Blandford D. (1989) Market intervention and international price stability. American Journal of Agricultural Economics, 71, 379-388.

APPENDIX

QUESTIONNAIRE

PART - 1

Name:

1. Gender:

a) Male   b) Female

2. Educational qualification:

a) 10th or below   b) Higher Secondary   c) graduate   d) post graduate e) professional

3. To which age group do you belong?

a) 18 or below   b) 18 -25   c) 26 -40   d) 41 -55   e) 56 -60   f) 60 0r above

4. Marital status:

a) Single   b) Married

5. Occupational status:

a) Salaried   b) Self-employed   c) Professional   d) Agriculturist   e) Retired

PART -2

6. How many years have you been farming agriculture?

a) Below 10 years   b) 10-20 years   c) Above 20 years

7. Problem faced by the farmers at the time of availing the loan facility

a) Procedural delay   b) Lack of knowledge

c) Lack of co - operation from the banker   d) Any other (please specify)

8. Financial institution's rules and regulations are

a) Flexible   b) Moderate   c) Rigid

9. Are you farming traditionally?   a) yes   b) No

10. How many family members depend on you?

a) Below 3 members b) 3 -6 members c) 7 -9 members   d) Above 9 members

11. What type labours have you used for cultivation?

a) Family members   b) Hired labours

12. What kind of financial support the bank is providing you?

a) Loan   b) debit and credit card   c) insurance d) wealth management

13. What are the sources of funds for wage payment?

    a) Cash   b) credit

14. How many years do you have an account in bank?

    a)5 -10 years   b) 11 -15 years   c) above 15 years

15. In what way do you have knowledge about the financial sources?

    a) Fellow farmers   b) Newspapers   c) Radios   d) Televisions

16. Sources of water for irrigation

    a) Canal   b) Tank   c) well with pump set   d) Filter point with Pump set

17. In motor pump set, do you have government free electricity connection?

    a) Yes   b) No

18. Mention the repayment pattern of interest   a) Regular   b) Defaulter

19. Please mention the problems faced for receiving agriculture finance.

    SA - Strongly Agree, A–Agree, N -Neutral, D - Disagree, SD - Strongly Disagree

S. NO	PROBLEMS	SA	A	N	D	SD
1	Not aware of the facility available					
2	Complex documentation					
3	Not satisfied with area approach					
4	Lack of service/ co-operation from the bank					
5	No faith in schemes / institutions					
6	Lack of educational knowledge					
7	Not satisfied with indemnity level					
8	Difficulties in opening bank account					
9	Loan has taken from sources other than banks					
10	High interest rate					

20. State your opinion on loan waiving scheme

    a) Good for agriculture development   b) Facilitates further loans

    b) Induces wilful default   d) waiving is the way to cheat the farmers

21. If any possible solution to minimise farmers problems: …

A Study of NGO Employees' Perception Towards Recruitment and Selection in Dakshina Kannada District

Divya M S* and Ravisha B**

Recruitment and selection plays an important role in the Non-Governmental Organizations' (NGOs) workplace to render good services to the marginalized group of people. Several studies have revealed that recruitment and selection is one of the important HRM practices that helps in enhancing the level of job satisfaction, job involvement and organizational commitment. This study has been carried out to examine the NGO employees' perception towards recruitment and selection in Dakshina Kannada district. A total of 264 sample size has been randomly chosen from selected NGOs. For the study purpose a structured questionnaire has been used consisting of a five-point Likert scale with statements related to recruitment and selection. The overall perception regarding recruitment and selection procedure is drawn by averaging the six items under study that has been presented. Overall, the respondents strongly agree that the existing recruitment and selection procedure in NGOs (small and big) is very good. In comparison, the recruitment and selection procedure is better in big NGOs than in small NGOs.

Introduction

The Non-Governmental Organizations (NGOs) play a vital role in the contemporary world, as these organizations have mushroomed phenomenally in the last few decades. NGOs are oriented towards rendering social services to the society to assist the marginalized groups of people, thereby becoming an important factor in the society. The NGOs are the important components of the third sector, as their goal is to achieve community development. NGOs act as a middleman between the government and the needy, the socially excluded and the marginalized groups of

* Assistant Professor, Dr. G Shankar Government Womens First Grade College and PG Study Centre, Ajjarkadu, Udupi, Karnataka, India; and is the corresponding author. E-mail: msdivyarao@gmail.com

** Associate Professor, Manel Srinivas Nayak Institute of Management, Bondel, Mangaluru, Karnataka, India. E-mail: ravishab@msnmbesant.edu.in

people. The NGOs are the auxiliary institutions which share the noble vision of government towards developing, protecting, uplifting and empowering the marginalized people. These organizations conceive the noble vision of poverty alleviation, universalization of fundamental education, quality healthcare, human resource development, women empowerment and child development, environmental protection, protection of human rights and gender equality.

As per the Karnataka Human Development Report (2005), NGOs are fully backed and supported by the government in undertaking various human development activities. The World Bank defines NGOs as "private organizations that pursue activities to relieve suffering, promote the interest of the poor, protect the environment, provide basic social services or undertake community development." Thus, in the present situation, the active initiatives and involvement of NGOs towards societal development have become noteworthy.

Thus the role of NGOs towards the rural community development becomes very significant for the progress of a nation (Ramakrishna, 2013). A large number of NGOs are working towards solving societal problems like the Rural Reconstruction Society (RRS), an NGO located in Prakasam district of Andhra Pradesh working to address the problems of the destitutes and to alleviate poverty (Geethanjali and Prabhakar, 2012). This indicates that NGOs are playing a significant role in providing good services to the people in various ways.

The NGOs in India have been growing by leaps and bounds. Nevertheless, the problems confronted by the players in these organizations are compounding. Along with the challenges of judicious and effective management of financial and information resources, the role of human resources in the smooth functioning of the NGOs has become significant. The Karnataka Human Development Report (2005) emphasizes the need for the skilled human resources in this sector, but their acquisition and retention has been a major challenge. As the operation of any enterprise is impossible without the proper flow of funds, the procurement of capital and funds from the donors and sponsors is also considered as a major challenge by the NGOs. In this regard, the employees play an important role in raising funds from outside sources for rendering services to the disadvantaged people.

A study by Parry *et al.* (2005) has also emphasized the significance of human resources in the Non-Profit Organizations (NPOs) and considered them to be valuable assets of the organization. Utilization of all other resources in the organization is fully dependent on its human resources. Many of the articles revealed that the human resources role is significant to achieve the predetermined goals of the organization (Geringer *et al.*, 2002; and Brewster and Less, 2006). Hence, in the organizational workplace of NGOs also employees are considered as the real assets and heroes of the enterprise as they act as channels in meeting the needs of the disadvantaged sections of the society (Morshed, 2001).

The effective management of human resource is essential in the organizations to enhance the productive efficiency of employees, to establish good relationship between the employee and the employer, in reducing the employee-related problems and grievances and to achieve organizational goals (Huselid, 1995). Therefore, it is essential for the organizations to take the initiative in this regard. Several studies by the researchers have found a positive relationship between effective Human Resource Management (HRM) and organizational performance (Arthur, 1994; and Huselid, 1995).

According to Levinson (1965), effective HRM is possible only when an organization integrates good human resource practices with management as it helps to build a good relationship between the employees and the organization. Supporting this view, Kepes and Delery (2007) opined that successful HRM is possible only when an organization implements HRM practices effectively.

Richardson and Thompson (1999) revealed the existence of a positive relationship between HRM practices and organizational productivity. 'HRM practices' is a broad concept that consists of the various individual components of HRM practices.

There are a myriad successful HRM practices followed across various organizations. Among the large number of HRM practices, it is a challenging task for the organization to decide the appropriate and relevant HRM practice to be implemented in their organization to enhance the performance level of employees. HRM practices play a major role in motivating employees and prompting them to work hard and smart. Broadly, HRM practices consist of 4 factors, namely, procurement, development, compensation and motivation and employee maintenance. Each factor consists of various HRM practices—the procurement factor includes recruitment and selection and orientation; the development factor consists of training and development; the compensation and motivation factor includes performance appraisal, remuneration, employee benefits; and the employee maintenance factor includes working conditions.

This study has made an attempt to analyze the employee perception towards recruitment and selection in Dakshina Kannada district.

Literature Review

The HRM practices play a vital role towards managing human resources in an effective manner. According to Schuler and Jackson (1987), HRM practices refer to "a system that attracts, develops, motivates and retains employees to ensure the effective implementation and the survival of the organization and its members."

A group of people observed HRM practices as a combination of several practices such as recruitment and selective staffing, training and development, accurate performance appraisal, high level of pay, fairness of pay, pay for performance, employee participation in decision making, flexible work schedules, team-based

approach, promotion opportunities, enriched job design, employment security (Arthur, 1994; Huselid, 1995; Pfeffer, 1998; Delery and Shaw, 2001; Appelbaum *et al.*, 2000; Whitener, 2001; and Wright *et al.*, 2003).

Ployhart *et al.* (2006) stated that recruitment and selection is one of the important HRM practices that influences the diversity in human resources and acts as one of the most important strategic mechanisms for achieving competitive advantage.

Good recruitment and selection process plays a vital role in the organizational workplace. Recruiting the right person for the right job is a challenging task. Implementation of good recruitment and selection policies is essential for each and every organization to enhance employee satisfaction level towards the job and organization.

Plenty of research has been undertaken by considering the factors of recruitment and selection and by establishing its relationship with employee job satisfaction. The studies found that good recruitment process, effective induction program (Verma *et al.*, 2012), proper human resource planning, effective recruitment and selection (Weeratunga, 2003; Katou and Budhwar, 2007; Absar *et al.*, 2010; Priya, 2013; and Chauhan and Patel, 2014) significantly impact employee job satisfaction. The study by Ray and Ray (2011) revealed that recruitment and selection has a negligible impact on the job satisfaction level of the employees. The study by Abutayeh and Al-Qatawneh (2012) revealed that good recruitment and selection policies significantly impact the job involvement level of employees. Latham and Leddy (1987) identified the various sources of recruitment and selection, namely, newspaper advertisements and employee referrals as positively impacting employee job attitudes. The process of recruitment and selection has a major impact on the organizational commitment level of employees. The recruitment and selection process acts as an important strategic mechanism for achieving competitive advantage. Juhdi *et al.* (2011) stated that it is the duty of organizations to design innovative recruitment and selection policies by considering the concept of selecting the right person for the right job, which would lead to enhanced employee commitment level. Prabhakar and Ram (2011) opined that implementing impartial and effective recruitment and selection policy in the organizational workplace helps to enhance the commitment level of employees. Based on the review of literature, it is revealed that impartial recruitment and selection process plays a significant role in the organizational workplace to enhance the job satisfaction level, job involvement level and commitment level among the employees. Hence, the present study makes an attempt to examine the NGO employees' perceptions about recruitment and selection.

Objective

The main objective of the study is to examine the perceptions about recruitment and selection with respect to the employees of NGOs in Dakshina Kannada district.

Data and Methodology

For the study purpose, six NGOs in the Dakshina Kannada district were taken into consideration. The selected NGOs come under the area of the five talukas of Dakshina Kannada district, namely, Mangalore, Bantwal, Puttur, Belthangady and Sullia. All these NGOs are rendering services in all the five talukas of Dakshina Kannada district. This study is empirical in nature, as the authors used simple statistical tools. As we know that the role played by NGO employees is significant, they are the real assets of NGOs as it is not possible to render social service using any kind of machines or tools. The target population for this study consists of employees of NGOs in Dakshina Kannada district. These NGOs are selected based on the following criteria.

- NGOs working towards eight Millennium Development Goals (MDGs) of United Nations Development Program (UNDP).

- NGOs working in all the five talukas of Dakshina Kannada district, i.e., Mangalore, Bantwal, Puttur, Belthangady and Sullia.

- NGOs working with more than twenty employees.

- NGOs working for the past 10 years continuously towards the MDGs.

The eight MDGs lay emphasis on poverty alleviation, universalization of primary education, gender equality and women empowerment, reducing child mortality, improvement of maternal health, and combating HIV/AIDS, malaria and other diseases and on developing a global partnership for inclusive development. These NGOs have been continuously performing well towards the achievement of the eight MDGs in the last 10 years in all the five talukas of Dakshina Kannada district. However, a few startup NGOs and other NGOs working on the MDGs are not considered as the numbers of employees working in them are very less (less than 10). Thus, only six NGOs constitute the study's sampling unit. A total of 264 sample size was randomly chosen from these units. The sampling units have been categorized into two groups based on the number of employees as—big NGO and small NGOs. A total of 132 samples are randomly chosen from the big NGOs. The remaining 50% of the samples are drawn randomly in proportion to the available population across each NGO.

The primary data for the research was collected over a period of eight months from August 2019 to March 2020.

The sample size was arrived at and determined by using Taro Yamane's formula given below:

$$n = \frac{N}{1 + N(e^2)}$$

where n = The sample size;

N = The population size (i.e., 774); and

e = Level of precision or error of sampling (i.e., 0.05).

Substituting these values into the formula, the sample size

$$n = \frac{774}{1 + 774(0.05)^2} = 264$$

On the whole, the authors collected data from 264 employees through personal interaction with NGO employees. A sample size of 264 responses was selected for the study. According to Hair *et al.* (2006), the recommended sample size of 250 is adequate for statistical analysis, since the sample size has a direct impact on the power of statistical analysis and the universal implication of the results.

All the 264 pre-tested questionnaires (see Appendix) were deployed by the authors in person to gather responses from the sample; as a result, responses have been completely obtained for all the questionnaires. Therefore, the response rate is 100%. However, there could be an unavoidable error in sample selection, as no technique is foolproof.

Results and Discussion

The respondents' perception about recruitment and selection:

In the questionnaire, the authors used different variables to capture the required attributes. Each attribute is measured through a set of questions. For capturing the perceptions towards recruitment and selection, six questions have been used. These six questions have been developed based on earlier studies which showed a significant relationship with recruitment and selection with job attitudes (Caldwell *et al.*, 1990; and Edgar and Geare, 2005).

In order to capture the perception and opinion of respondents, a five-point Likert scale has been employed. All responses have been measured on a five-point Likert scale with 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly agree. The agreement of the respondents towards the given statements has been measured based on mean value: if mean value is less than 2, it indicates strongly disagree or very poor; if mean value is less than 3, it indicates disagree or poor; if the mean value equals to 3, it indicates neutral opinion; if mean value is greater than 3, it indicates agree or good; and if mean value is greater than 4, it indicates strongly agree or very good. An analysis of their responses has been provided in Table 1. The perceptions towards recruitment and selection are measured using six items. The respondents' responses with respect to recruitment and selection are also shown in Table 1. The following statistical tools, namely, mean, standard deviation, median, and Mann-Whitney test, have been used with an intention to identify whether there is any difference that exists in the perception about recruitment and selection between small and big NGO employees.

The agreement or disagreement of the respondents with respect to "the impartial recruitment and selection process" in the NGOs' workplace (small and big) under study has been presented in Table 1. The respondents strongly agree that the recruitment and selection process is impartial with Mean ± SD: 4.16 ± 1.06 (mean > 4). Further, the level of agreement among the respondents of small NGOs is Mean ± SD: 4.20 ± 0.93 (mean > 4) and among the respondents of big NGO is Mean ± SD: 4.12 ± 1.17 (mean > 4), which indicates that the respondents strongly agree that the recruitment and selection process is impartial as the mean value is > 4. Mann-Whitney Test shows that z-value = 0.17 and calculated p = 0.868 > 0.05 clearly indicates that there is no significant difference in the agreement among the respondents of both small and big NGOs.

Table 1: Response Towards Impartial Recruitment and Selection Process									
Type	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	SD	Median	Mann-Whitney Test z Value and p-Value
Small n=132	3	2	22	43	62	4.20	0.93	4.00	
	2.3%	1.5%	16.7%	32.6%	47.0%				
Big n=132	10	1	20	33	68	4.12	1.17	5.00	z = 0.17 p = 0.868 N.S.
	7.6%	8%	15.2%	25.0%	51.5%				
Total n=264	13	3	42	76	130	4.16	1.06	4.00	
	4.9%	1.1%	15.9%	28.8%	49.2%				
Note: N.S: Not Significant.									

Table 2 gives the respondents' perception towards the "use of interview methods in recruitment and selection process" in NGOs (small and big). The respondents strongly agree that interview methods are used in the recruitment and selection process with Mean ± SD: 4.55 ± 0.74 (mean > 4). Further, the level of agreement among the respondents of small NGOs is Mean ± SD: 4.36 ± 0.75 (mean > 4) and among the respondents of big NGO is Mean ± SD: 4.73 ± 0.68 (mean > 4), which indicates that the respondents have strongly agreed that the interview methods are used during recruitment and selection process. Mann-Whitney Test shows that z-value = 5.07 and calculated p = 0. 000 < 0.01, which clearly indicates that there is high significant difference in agreement among the respondents of both small and big NGOs. In comparison, the use of interview methods in recruitment and selection process is more in big NGOs than in small NGOs.

The agreement or disagreement of the respondents with respect to "fair and consistent mode of recruitment process" in NGOs (small and big) under study has

Table 2: Response Towards the Use of Interview Methods in Recruitment and Selection Process									
Type	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	SD	Median	Mann Whitney Test Z-Value and p-Value
Small *n*=132	1	0	16	48	67	4.36	0.75	5.00	
	0.8%	0.0%	12.1%	36.4%	50.8%				
Big *n*=132	1	3	2	19	107	4.73	0.68	5.00	*z* = 5.07 *p* = 0.000 H.S.
	0.8%	2.3%	1.5%	14.4%	81.1%				
Total *n*=264	**2**	**3**	**18**	**67**	**174**	**4.55**	**0.74**	**4.00**	
	0.8%	**1.1%**	**6.8%**	**25.4%**	**65.9%**				
Note: H.S: Highly Significant.									

been presented in Table 3. Respondents strongly agree that the mode of the recruitment and selection process is fair and consistent with Mean ± SD: 4.28 ± 0.92 (mean > 4). Further, the level of agreement among the respondents of small NGOs is Mean ± SD: 4.19 ± 0.90 (mean > 4) and among the respondents of big NGO is Mean ± SD: 4.38 ± 0.94 (mean > 4). This indicates that the respondents strongly agree that the mode of recruitment and selection process is fair and consistent. Mann-Whitney Test shows that *z*-value = 2.33 and calculated *p* = 0. 020 < 0.05, which clearly indicates that there is a significant difference in agreement among the respondents of both small and big NGOs. In comparison, the mode of the recruitment and selection process is more fair and consistent in big NGOs than in small NGOs.

Table 3: Fair and Consistent Mode of Recruitment and Selection Process									
Type	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	SD	Median	Mann-Whitney Test Z-Value and p-Value
Small *n*=132	3	1	22	48	58	4.19	0.90	4.00	
	2.3%	0.8%	16.7%	36.4%	43.9%				
Big *n*=132	3	2	18	28	81	4.38	0.94	5.00	*z* = 2.33 *p* = 0.020 Sig.
	2.3%	1.5%	13.6%	21.2%	61.4%				
Total *n*=264	6	3	40	76	139	4.28	0.92	5.00	
	2.3%	1.1%	15.2%	28.8%	52.7%				
Note: Sig: Significant.									

Table 4 gives the data about the level of agreement or disagreement of the respondents with respect to "received a large amount of information about job during the recruitment and selection process" in NGOs (small and big). The respondents have strongly agreed that they have received a large amount of information about the job during the recruitment and selection process with Mean ± SD: 4.30 ± 1.00 (mean > 4). Further, the level of agreement among the respondents of small NGOs is Mean ± SD: 4.18 ± 0.92 (mean > 4) and among the respondents of big NGO is Mean ± SD: 4.42 ± 1.06 (mean > 4), which indicates that the respondents have strongly agreed that they received a large amount of information about their job before joining. Mann-Whitney Test shows that Z-value = 3.46 and calculated p = 0. 001 < 0.01, which clearly indicates that there is high significant difference in agreement among the respondents of both small and big NGOs. Compared to small NGO respondents, the big NGO respondents have received more information about their job during the recruitment and selection process.

Table 4: Response Towards Received Job Information Before Joining									
Received a large amount of information about the job during the recruitment process									
Type	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	SD	Median	Mann-Whitney Test Z-Value and p-Value
Small n=132	2	7	13	53	57	4.18	0.92	4.00	z = 3.46 p = 0.001 H.S.
	1.5%	5.3%	9.8%	40.2%	43.2%				
Big n=132	7	2	9	24	90	4.42	1.06	5.00	
	5.3%	1.5%	6.8%	18.2%	68.2%				
Total n=264	9	9	22	77	147	4.30	1.00	5.00	
	3.4%	3.4%	8.3%	29.2%	55.7%				
Note: H.S: Highly Significant.									

The agreement or disagreement of the respondents with respect to "received accurate job information" in NGOs (small and big) under study has been presented in Table 5. The respondents strongly agree that the information received about their job is accurate with Mean ± SD: 4.38 ± 0.86 (mean > 4). Further, the level of agreement among the respondents of small NGOs is Mean ± SD: 4.08 ± 1.00 (mean > 4) and among the respondents of big NGOs is Mean ± SD: 4.67 ± 0.56 (mean > 4), which indicates that the respondents strongly agree that the information received about their job is accurate. Mann-Whitney Test shows that Z-value = 5.61 and calculated p = 0. 000 < 0.01, which clearly indicates that there is high significant difference in agreement among the respondents of both small and big NGOs. In comparison, it is revealed that the respondents of big NGOs have received more accurate information about their job than the respondents of small NGOs.

Table 5: Response Towards Received Accurate Job Information

Type	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	SD	Median	Mann-Whitney Test Z-Value and p-Value
Small n=132	4	8	13	55	52	4.08	1.00	4.00	
	3.0%	6.1%	9.8%	41.7%	39.4%				
Big n=132	0	0	6	31	95	4.67	0.56	5.00	z = 5.61 p = 0.000 H.S.
	0.0%	0.0%	4.5%	23.5%	72.0%				
Total n=264	4	8	19	86	147	4.38	0.86	5.00	
	1.5%	3.0%	7.2%	32.6%	55.7%				

Note: H.S: Highly Significant.

The agreement or disagreement of the respondents with respect to "the level of satisfaction with respect to recruitment and selection process" in NGOs (small and big) under study has been presented in Table 6. The respondents strongly agreed that they are satisfied with the existing recruitment and selection process in the NGOs with Mean ± SD: 4.38 ± 0.85 (mean > 4). Further, the level of agreement among the respondents of small NGOs is Mean ± SD: 4.12 ± 0.94 (mean > 4) and among the respondents of big NGOs is Mean ± SD: 4.63 ± 0.67 (mean > 4), which indicates that the respondents are satisfied with the recruitment and selection process. Mann-Whitney test shows that Z-value = 5.16 and calculated $p = 0.000 < 0.01$, which clearly indicates that there is high significant difference in agreement

Table 6: Response Towards the Level of Satisfaction with Recruitment and Selection Process

Type	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	SD	Median	Mann-Whitney Test Z-Value and p-Value
Small n=132	2	8	15	54	53	4.12	0.94	4.00	
	1.5%	6.1%	11.4%	40.9%	40.2%				
Big n=132	1	0	8	29	94	4.63	0.67	5.00	z = 5.16 p = 0.000 H.S.
	0.8%	0.0%	6.1%	22.0%	71.2%				
Total n=264	**3**	**8**	**23**	**83**	**147**	**4.38**	**0.85**	**5.00**	
	1.5%	**3.0%**	**7.2%**	**32.6%**	**55.7%**				

Note: H.S: Highly Significant.

among the respondents of both small and big NGOs. In comparison, it is revealed that the level of satisfaction towards the recruitment and selection is more among the respondents of big NGOs than the respondents of small NGOs.

The overall perception regarding recruitment and selection procedure is drawn by averaging the six items under study and has been presented in Table 7. Overall, the respondents strongly agreed that the existing recruitment and selection procedure in NGOs (small and big) is very good with Mean ± SD: 4.33 ± 0.63 (mean > 4). Overall, the employees of small NGOs strongly agreed that the recruitment and selection procedure is very good with Mean ± SD: 4.20 ± 0.67 (=mean > 4) and the respondents of big NGO strongly agreed that the overall recruitment and selection procedure is very good with Mean ± SD: 4.47 ± 0.56 (mean > 4). Mann-Whitney Test shows that Z-value = 3.30 and calculated p = 0.001 < 0.01, which clearly indicates that there is high significant difference between the respondents response with respect to overall response towards the recruitment and selection in the small and big NGOs. In comparison, the recruitment and selection procedure is better in big NGO than in small NGOs.

Table 7: Overall Response Towards Recruitment and Selection								
	Type	N	Mean	SD	Median	Z	p-Value	
Recruitment and Selection (Staffing)	Small	132	4.20	0.67	4.20	3.30	0.001	H.S.
	Big	132	4.47	0.56	4.60			
	Total	**264**	**4.33**	**0.63**	**4.40**			

Conclusion

The NGOs are the important components of the third sector organization which assume a significant role towards building a modern India of new opportunities. These organizations are running parallel to government organizations and supplement the activities of government. NGOs work collectively towards the achievement of societal development and also help to bridge the gap created by the government. The role of human resource is significant in the smooth functioning of NGOs. They are considered as a valuable asset in the NGOs' workplace, because it is not possible to replace human resources with any physical infrastructure. Therefore, it is the responsibility of NGOs to take care of their employees by implementing effective HRM practices in the workplace to enhance their job attitudes. Recruitment and selection is one of the important HRM practice in non-governmental organizations. It acts as a base to enhance the performance of all other components of HRM practices, namely, training and development, performance appraisal, performance management, team management, etc. A good recruitment and selection policy helps NGOs to sustain for a longer period of time and also to achieve the desired results. Recruitment and selection is one of the important HRM practices that plays a significant role in enhancing the job

attitudes by motivating employees to serve in the same organization for a longer period of time. Thus several employee-related problems, namely, labor turnover and absenteeism can be reduced. Therefore, the findings of this study have highlighted that it is imperative for NGOs to implement recruitment and selection in the organizational workplace to enhance the employees' level of job satisfaction, commitment and involvement.

Limitations: The sample size of 264 has been considered to be adequate in this study but may not be representative of the population. Therefore, the findings of this study cannot be generalized to the population.

References

1. Absar M M, Azim M T, Balasundaram N and Akhter S (2010), "Impact of Human Resources Practices on Job Satisfaction: Evidence from Manufacturing Firms in Bangladesh", *Petroleum-Gas University of Ploiesti BULLETIN*, Vol. 62, No. 2, pp. 31-42.

2. Abutayeh B and Al-Qatawneh M (2012), "The Effect of Human Resource Management Practices on Job Involvement in Selected Private Companies in Jordan", *Canadian Social Science*, Vol. 8, No. 2, pp. 50-57.

3. Appelbaum E, Bailey T, Berg P and Kalleberg A L (2000), *Manufacturing Advantage: Why High-Performance Work Systems*, Cornell University Press, Ithaca, New York.

4. Arthur J B (1994), "Effects of Human Resource Systems on Manufacturing Performance and Turnover", *Academy of Management Journal*, Vol. 37, No. 3, pp. 670-687.

5. Brewster C and Less S (2006), "The Success of NGOs Hinges on Their People— But HR is Neglected in the Sector", *People Management*, Vol. 12, No. 6, p. 44.

6. Caldwell D F, Chatman J A and O'Reilly C A (1990), "Building Organizational Commitment: A Multi Firm Study", *Journal of Occupational Psychology*, Vol. 63, No. 3, pp. 245-261.

7. Chauhan Y S and Patel N K (2014), "Human Resources Management Practices and Job Satisfaction: A Study of Hotel Industry", *Abhinav National Monthly Refereed Journal of Research in Commerce and Management*, Vol. 3, No. 9, pp. 1-6.

8. Delery J E and Shaw J D (2001), "The Strategic Management of People in Work Organizations: Review, Synthesis, and Extension", in G R Ferris (Ed.), *Research in Personnel and Human Resources Management*, Vol. 20, pp. 165-197, Elsevier Science, JAI Press, available at https://doi.org/10.1016/S0742-7301(01)20003-6

9. Edgar F and Geare A (2005), "HRM Practice and Employee Attitudes: Different Measures – Different Results", *Personnel Review*, Vol. 34, No. 5, pp. 534-549.

10. Geethanjali R and Prabhakar K (2012), "NGO Role in Watershed Programme of Prakasam District: A Case Study of (RRS) Muttamvari Palem Watershed", *International Society for Asia-Pacific Studies (ISAPS)*, Vol. 4, No. 1, pp. 211-221.

11. Geringer J M, Frayne C A and Milliman J F (2002), "In Search of "Best Practices" in International Human Resource Management: Research Design and Methodology", *Human Resource Management*, Vol. 41, No. 1, pp. 5-30.

12. Government of Karnataka (2005), Karnataka Human Development Report, Planning and Statistics Department Government of Karnataka, Bangalore.

13. Hair J F, Black W C, Banin B J *et al.* (2006), "Multivariate Data Analysis", in J F Hair, W C Black, R E Babin, R E Anderson and R L Tatham (Eds.), *Multivariate Data Analysis*, 6th Edition, Prentice Hall, New Jersey.

14. Huselid M A (1995), "The Impact of Human Resource Management Practices on Turnover, Productivity, and Corporate Financial Performance", *Academy of Management Journal*, Vol. 38, No. 3, pp. 635-672.

15. Juhdi N, Pa F, Wan and Othman A (2011), "HR Practices, Organizational Commitment and Turnover Intention: A Study on Employees in Klang Valley, Malaysia", *Recent Researches in Applied Economics*, pp. 30-36.

16. Katou A A and Budhwar P S (2007), "The Effect of Human Resource Management Policies on Organizational Performance in Greek Manufacturing Firms", *Thunderbird International Business Review*, Vol. 49, No. 1, pp. 1-35.

17. Kepes S and Delery J E (2007), "HRM Systems and the Problem of Internal Fit", in M Armstrong, *Armstrong's Handbook of Human Resource Management Practice*, 11th Edition, Kogan Page, London, UK.

18. Latham V M and Leddy P M (1987), "Source of Recruitment and Employee Attitudes: An Analysis of Job Involvement, Organizational Commitment, and Job Satisfaction", *Journal of Business and Psychology*, Vol. 1, No. 3, pp. 230-235.

19. Levinson H (1965), "Reciprocation: The Relationship Between Man and Organization", *Administrative Science Quarterly*, Vol. 9, No. 4, pp. 370-390.

20. Morshed A M (2001), *Bearers of Change: The Field Workers of NGOs in Bangladesh*, Durham Theses, Durham University, UK.

21. Parry E, Kelliher C, Mills T and Tyson S (2005), "Comparing HRM in the Voluntary and Public Sectors", *Personnel Review*, Vol. 34, No. 5, pp. 588-602.

22. Pfeffer J (1998), *The Human Equation*, Harvard Business School Press, Boston.

23. Ployhart R E, Schneider B and Schmitt N (2006), *Staffing Organizations: Contemporary Practice and Theory*, Third Edition, Lawrence Erlbaum associates, Inc.

24. Prabhakar G V and Ram P (2011), "Antecedent HRM Practices for Organizational Commitment", *International Journal of Business and Social Science*, Vol. 2, No. 2, pp. 55-62.

25. Priya T U (2013), "Impact of Hrm Practices on Employee Satisfaction in Public Sector Commercial Banks in Chennai", *International Journal of Management Academy*, Vol. 1, No. 2, pp. 91-95.

26. Ramakrishna H (2013), "The Emerging Role of NGOs in Rural Development of India: An Assessment", *International Journal of Social Science and Interdisciplinary Research*, Vol. 2, No. 4, pp. 43-51.

27. Ray S and Ray I A (2011), "Human Resource Management Practices and Its Effect on Employees' Job Satisfaction: A Study on Selected Small and Medium Sized Iron and Steel Firms in India", *Public Policy and Administration Research*, Vol. 1, No. 1, pp. 22-33.

28. Richardson R and Thompson M (1999), *The Impact of People Management Practices on Business Performance: A Literature Review*, Short Run Press, Great Britain.

29. Schuler R S and Jackson S E (1987), "Linking Competitive Strategies with Human Resource Management Practices", *Academy of Management Executive*, Vol. 1, No. 3, pp. 207-219.

30. Verma A, Malhotra M and Bedi M (2012), "Exploring the Relationship Between HR Practices and Job Satisfaction Across Selected IT Companies", *The IUP Journal of Organizational Behavior*, Vol. 11, No. 1, pp. 7-22.

31. Weeratunga L (2003), "Acquiring Human Resources – Recruitment, Selection and Orientation"*, Commonwealth of Learning Executive MBA/MPA C3 Human Resource Management*, pp. 5-44, Block 6, Bangladesh Open University, Dhaka.

32. Whitener E M (2001), "Do "High Commitment" Human Resource Practices Affect Employee Commitment? A Cross-Level Analysis Using Hierarchical Linear Modeling", *Journal of Management*, Vol. 27, No. 5, pp. 515-535.

33. Wright P M, Gardner T M and Moynihan L M (2003), "The Impact of HR Practices on the Performance of Business Units", *Human Resource Management Journal*, Vol. 13, No. 3, pp. 21-36.

Appendix

Questionnaire

Participants in this survey are requested to complete the attached survey questionnaire. The results of the study will be utilized to provide valuable information to NGO and for research.

Kindly read the items carefully and tick ( ) in the appropriate box.

Personal Information

Name (Optional):_____

Gender: ☐ Male   ☐ Female

Age: ☐ Under 25 years   ☐ 26-35 years

         ☐ 36-45 years   ☐ Above 46 years

Please respond to these questions based on your current or most recent employment experience (please tick your answer). Give your opinion on the following statements relating to the recruitment and selection process in your NGO.

Note: SA-Strongly Agree; A-Agree; N-Neutral; D-Disagree; SD-Strongly Disagree (please tick ( ) your answer).

S. No.	Statement	SA	A	N	D	SD
1.	The recruitment process is impartial					
2.	Interview methods are used during the employee recruitment process					
3.	The mode of the recruitment process followed by this NGO is fair and consistent					
4.	I received a large amount of information about my job before being employed during the recruitment process					
5.	All the information I received on my job during the recruitment process is accurate					
6.	Overall, I am satisfied with the recruitment and selection process in this NGO					

Reference # 02J-2021-10-01-01