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RESEARCH PAPER

ANALYSIS OF SELECTED NSE LISTED BANKING STOCKS: RELATIVE STRENGTH INDEX (RSI) APPROACH

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ABSTRACT

Any investment decision is taken with a view of earning profit/appreciation and these decisions are important because they involve deployment of funds. These decisions are affected by multiple factors and analyzing all these factors to take a sound investment decision is a difficult task for the investor. In order to take these decisions the past prices and past movement of the stocks of the company must be considered. J. Welles Wilder Jr. in his book called New Concepts in Technical Trading Systems (1978) introduced an indicator called Relative Strength Index (RSI) which is an oscillator helping to identify the overbought and oversold condition of a stock based on its past prices and therefore helping the investor to identify market entry and exit time. In this study RSI is applied to 15 selected banks stocks which are listed on NSE and the relative strength index of all the banks are calculated in order to see the overbought and oversold condition. From the study it is seen that only 3 banks show in overbought situation in the month of March 2019 while 12 banks show an average condition wherein their RSI are between 30 and 70. No bank shows an oversold situation in the month of March 2019.

KEYWORDS

Banking Sector, RSI, NSE, Fundamental & Technical Analysis, Overbought, Oversold.

1. INTRODUCTION

Banks play a vital role in any economy by developing a sound financial system. Banks are important as they help in maintaining a proper flow of money in the economy. They help in transferring funds from where there is abundance to where there is scarcity by providing loans to companies and individuals in order to carry out their respective businesses. This is turn helps in the capital formation and promotion of industry which are vital aspects for the economical development of the country. Banks help households to save their money by depositing it in the banks and thus earning interest and therefore they are vital for borrowers as well as lenders.

Analyzing the stocks of any company can be quite a challenging task if the right information is not available to the investor at the right time. An investor invests in any stock with the basic aim of earning profit. An analysis of the stock movement is, therefore, of utmost importance to the investor before he/she makes their investment decision. Fundamental and technical analysis comes to the investor's aid and is used to analyze the stocks of various companies before the buying and selling of stock takes place.

Fundamental analysis is based on analyzing the stocks on basically three aspects i.e. economy, industry and company. It aims at finding the intrinsic value of any stock and is of long term approach. Technical analysis, on the other hand is based on historical data including the past price movements of the stock. It is however short term in nature.

Relative strength index is a part of the technical analysis and was developed by J. Welles Wilder Jr. and introduced in his book in 1978, new concepts in Technical Trading Systems. It is an indicator showing the overbought and oversold condition of any stock which indicates a 'sell' and a 'buy' respectively.

2. REVIEW OF LITERATURE

- Manoj RS and Dr. Suresha B (2018) has found in their study "Technical analysis of stock performance: Evidence from Indian information technology & banking sector" that RSI, simple moving average and beta are indicators of deciding about the investment.
- Manas Mayur (2015) in their study "Understanding technical analysis: a conceptual framework" has discussed about moving averages and technical analysis and how they can be used to discover entry and exit points from market.
- B.Nisha (2018) in her study "Equity analysis of banking sector listed in NSE" has used relative strength index to analyze the banking stocks on NSE and found out the entry and exit signals of five major banks.
- Adrian Ţăran-Moroşan (2011) in his study "The relative strength index revisited" has tested a set of data with the help of RSI in its classical form and also in its adjusted form by including trading volume and comparing the results thereby.
- Bing Anderson and Shuyun Li (2015) in their study "An investigation of the relative strength index" has found that the RSI can incur some small losses when the traditional parameters of buy and sell signal are used however when these parameters are changed slightly then it can help in getting profits.
- Yulius Hari and Lily Puspa Dewi (2018) in their study "Forecasting System Approach for Stock Trading with Relative Strength Index and Moving Average Indicator" has used relative strength index and moving average as a method to analyze the stocks and identify the time to buy or sell the stocks.
- R. Chitra (2011) in her study "Technical Analysis on Selected Stocks of Energy Sector" has used various indicators like beta, RSI and moving averages to analyze the stocks of the energy sector.

3. OBJECTIVE OF THE STUDY

The objective of study is to analyze the movement of the stocks based on their relative strength index and then decide whether it is an overbought situation or oversold situation. By analyzing this investor can predict the market entry and exit time.

4. RESEARCH METHODOLOGY

In order to conduct present study 15 banks (both private and public) have been selected from NSE on a random basis and data about their closing prices for the period ranging from March 2018 to March 2019 is used in order to calculate the relative strength index and find out the overbought and oversold condition of the stock.

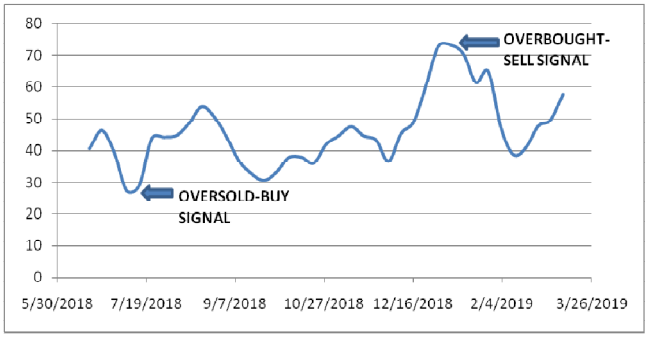
Relative strength index is calculated using the formula

$$RSI = 100 - [100 / (1 + RS)]$$

Where, RS= average gain/ average loss

5. ANALYSIS AND INTERPRETATIONS

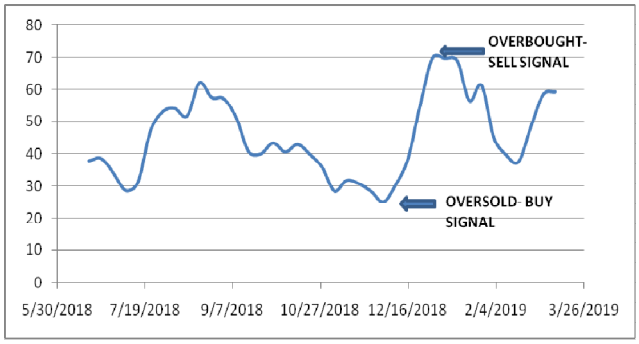
5.1 UNION BANK OF INDIA (RSI GRAPH)



INTERPRETATION: From the RSI values of union bank the 14 day RSI chart is plotted. RSI is considered overbought when above 70 and oversold when below 30.

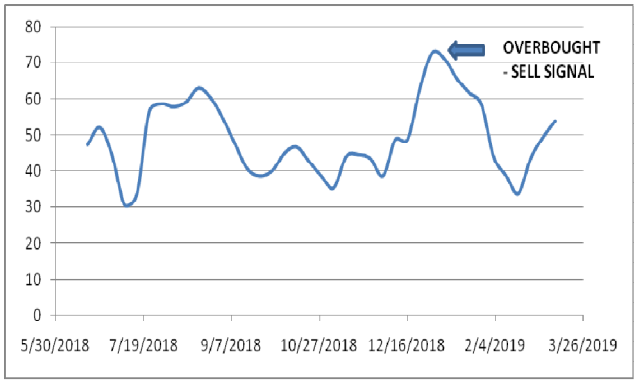
From June 2018 it is seen somewhere near 40 and then it drops in the month of July below 30 which shows an oversold situation. After 15 July it is seen that RSI never really falls below 30 only one time it touched 30 in the month of September. After this for a while it oscillates between 30 and 70. Only in the month of December 2018 and January 2019 it crosses 70 which show an overbought situation. It is seen that RSI is around 55-60 during March so investors can wait and then sell their shares.

5.2 BANK OF BARODA(RSI GRAPH)



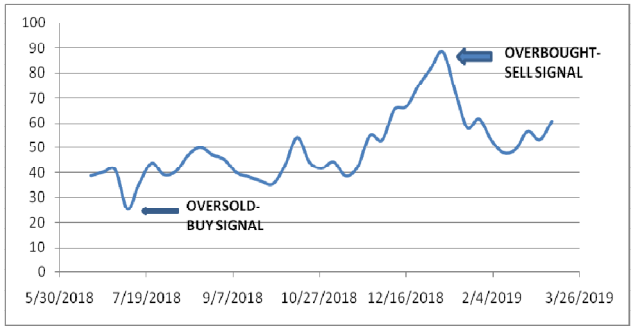
INTERPRETATION: From the RSI values of bank of Baroda the 14 day RSI graph is plotted. From June 2018 till October 2018 the RSI is above 30 but in November it falls below 30 and in starting of December 2018 it become 25, which indicates a buy signal. After that it suddenly rises and almost touches 70 in january2019 after that it oscillates but doesn't fall below 30 so it is an ideal situation for investors to invest. In March it is below 70 so it is a safe position for investors to wait and then they can sell their shares.

5.3 CANARA BANK (RSI GRAPH)



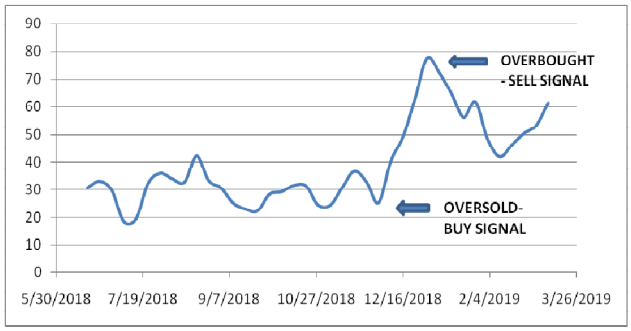
INTERPRETATION: From the RSI values of canara bank the 14 day RSI graph is plotted. It is seen that for majority of time between July 15 2018 till December 23 2018 the RSI oscillates between 30 and 70. But on 30th December and beginning of January it goes beyond 70 showing overbought situation so it indicates the investors to sell their holdings. Again it is seen in March that the RSI is 50-55 so it is a safe position for investors to wait and later on they can sell their shares.

5.4 FEDERAL BANK(RSI GRAPH)



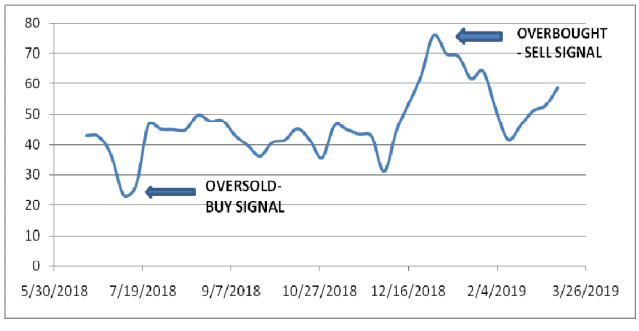
INTERPRETATION: From the RSI values of federal bank the 14 day RSI graph is plotted. The RSI gets below 30 and touches 25 in starting July which indicates oversold situation indicating a buy. In the month of December and starting January it moves beyond 70 and touches 88 which indicate an overbought situation. After that it falls and oscillates between 30 and 70. In March it is seen that the RSI is at 60 so investors can still wait for it to rise and then they can sell shares.

5.5 SYNDICATE BANK(RSI GRAPH)



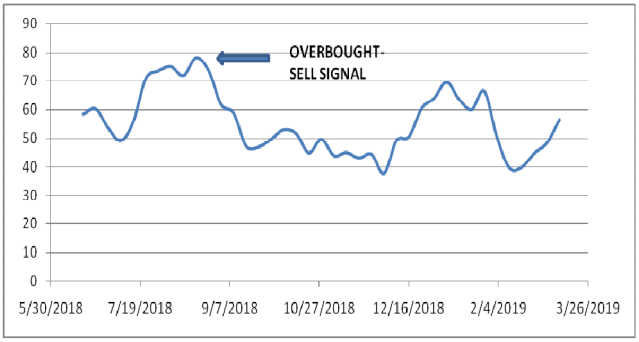
INTERPRETATION: From the RSI values of syndicate bank the 14 day RSI graph is plotted. It is seen that for many times during 2018 the RSI is below 30 and shows an oversold situation and indicates a buy. However in December and January beginning it crosses 70 indicating an overbought situation. In March it is at 60 so investors can wait for the RSI to rise and they can then sell their holdings. It is a risky investment so careful analysis is required.

5.6 BANK OF INDIA (RSI GRAPH)



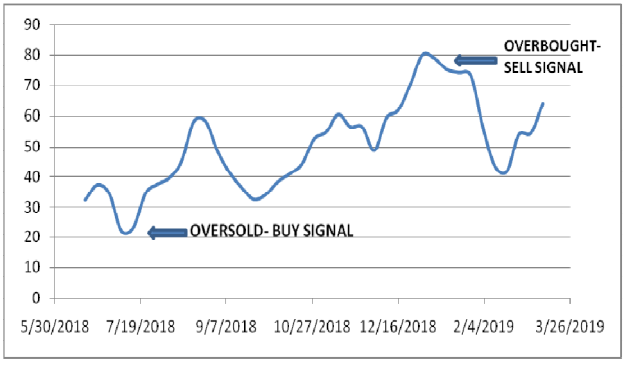
INTERPRETATION: From the RSI values of bank of India the 14 day RSI graph is plotted. The RSI below 30 shows an oversold situation and above 70 shows an overbought situation. It falls below 30 once in the month of July and for a major time it oscillates between 30 and 70 but in the end of December 2018 it crosses 70 showing an overbought situation and indicating to sell the holdings held by investors. Again in March it is seen that the RSI is rising and investors can now wait for it to rise and sell their shares.

5.7 STATE BANK OF INDIA (RSI GRAPH)



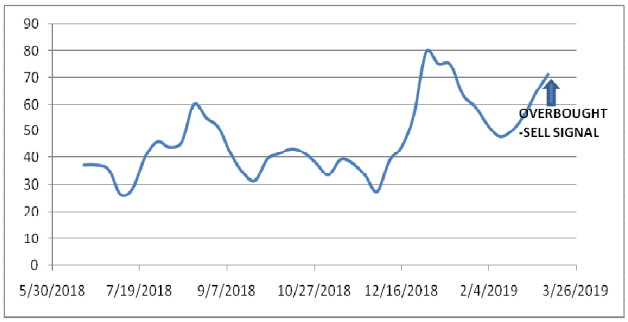
INTERPRETATION: From the RSI values of state bank of India the 14 day RSI graph is plotted. In the month of July and august RSI crosses 70 and indicates an overbought situation. The RSI never falls below 30 and oscillates between 30 and 70. In January 2019 it almost touches 70 indicating that the investors can sell their holdings. In March it is seen that it is rising so existing investors can wait to sell.

5.8 ORIENTAL BANKOF COMMERCE (RSI GRAPH)



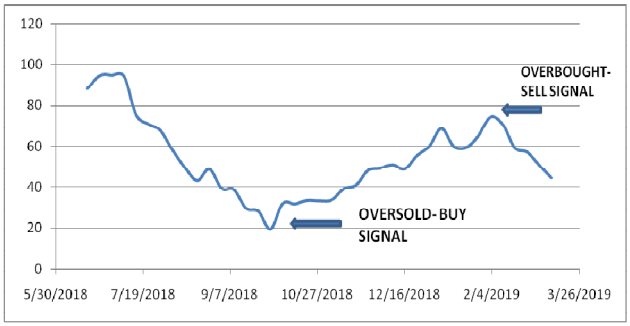
INTERPRETATION: From the RSI values of oriental bank of commerce the 14 day RSI graph is plotted. It is seen that only once the rsi touches 70 and go beyond it that is in the month of December 2018 and January 2019 after which it falls and rises again in the month of March. So for investors it is a safe situation as it the RSI shows an upward trend and therefore investors can wait for it to rise and then sell their holdings since RSI is at 63.

5.9 PUNJAB NATIONAL BANK (RSI GRAPH)



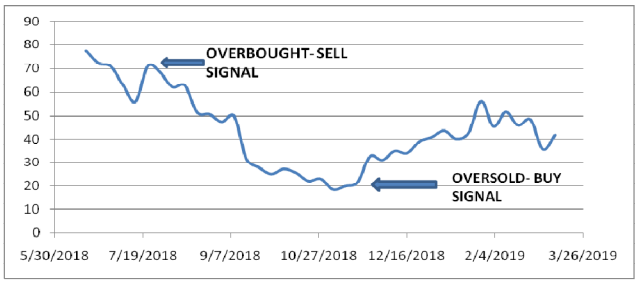
INTERPRETATION: From the RSI values of Punjab national bank the 14 day RSI graph is plotted. It is seen that the stock of Punjab national bank falls below 30 in the month of July, September and December but from 23rd to 30th December it rises and crosses 70 indicating an overbought situation. In March it again touches 70 which show that the investors should sell their holdings as it is a good time to sell because market is showing bullish trend.

5.10 KOTAK MAHINDRA BANK (RSI GRAPH)



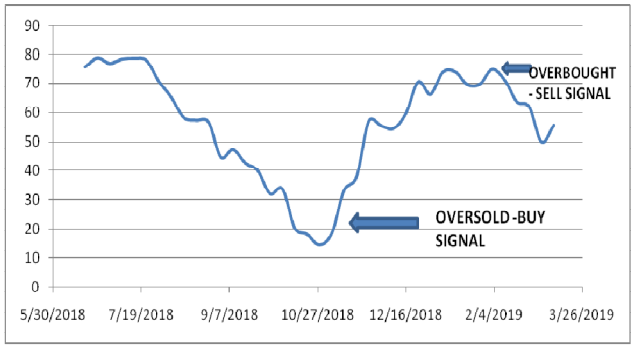
INTERPRETATION: From the RSI values of KOTAK Mahindra bank the 14 day RSI chart is plotted. It is seen that the RSI starts from an overbought situation and the investors should not buy the security and then it falls and become less than 30 in the month of September which is a good time to buy and then starts rising and crosses 70 in February beginning. However in March it is seen that RSI is falling and therefore it is not a good time to sell but investors can wait for the RSI to fall and then they can buy the shares(for new investors).

5.11 INDUSIND BANK (RSI GRAPH)



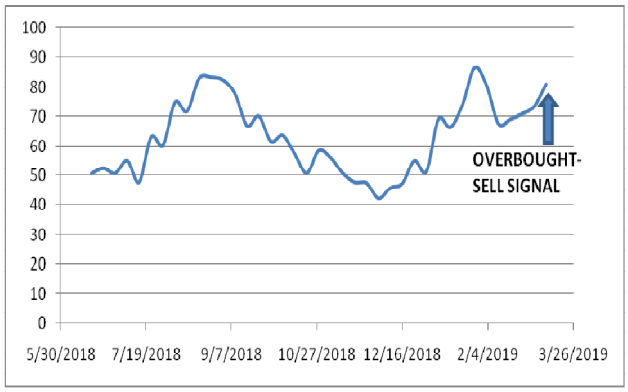
INTERPRETATION: From the RSI values of INDUSIND bank the 14 day RSI graph is plotted. The RSI starts with an overbought situation and therefore the stocks should not be bought then and then it falls and become less than 30 in September and remains less than 30 till November. Then it oscillates between 30 and 70 but never touches 70. It is a risky time for the investors to sell their holdings since it is not near 60 or 70 but new investors can buy holdings at this point.

5.12 HDFC BANK (RSI GRAPH)



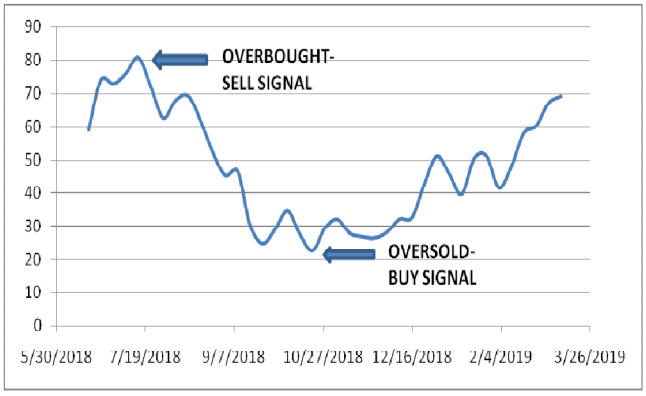
INTERPRETATION: From the RSI values of HDFC bank the 14 day RSI graph is plotted. It is seen that the stock starts from an overbought situation and then falls continuously where in July it falls below 30 and shows an oversold situation indicating a buy. After which it rises and touches 70 and crosses it which is a good time for the investors to sell their securities. In march it is somewhere between 50-60 which means the investors should wait as it is expected to rise in future.

5.13 AXIS BANK (RSI GRAPH)



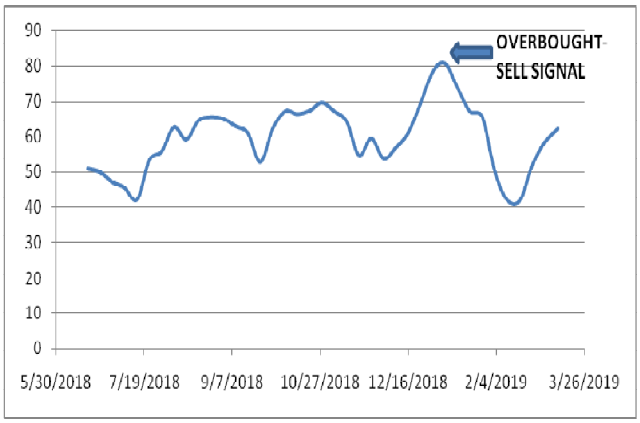
INTERPRETATION: From the RSI values of axis bank the RSI graph is plotted. It is seen that the stock never touches 30 or even 40 but goes beyond 70 in the months of august and September and then again in January and in March too. It is better not to buy the security since it may rise and investors should wait for it to come down. But existing investors can sell their securities at this point since market shows a bullish trend and it is a good time since in March it is beyond 70. Otherwise too axis bank shows good trends so investors can consider this stock.

5.14 YES BANK (RSI GRAPH)



INTERPRETATION: From the RSI values of yes bank the 14 day RSI graph is plotted. It is seen that the stocks shows an overbought situation in the month of June and July 2018 and the investors should not buy but sell their stocks And then it falls and become less than 30 in the month of September and October and the stocks should be bought then as it again rises in the month of march and then touches 70 which shows bullish trend and market is ideal for investors to sell their shares.

5.15 ICICI BANK (RSI GRAPH)



INTERPRETATION: From the RSI values of ICICI bank the RSI graph is plotted. It is seen that the stock oscillates between 30 and 70 but never touches 30. It touches 70 two times during October and then in December end and January it touches 70 and crosses it showing an overbought situation and the investors should sell the security. In February it is falling again to rise in March which is a good time for investors to buy as the stock will rise. In March an upward trend is seen as RSI is rising so investors can wait so that it rises more.

6. FINDINGS

- For ICICI bank in March an upward trend is seen as RSI is rising so investors can wait so that it raises more.
- For yes bank, in the month of March the RSI is rising and touches 70 which shows overbought situation and

market is ideal for investors to sell their shares.

- For axis bank in the month of March existing investors can sell their securities since market shows an overbought situation and it is a good time since in March it is beyond 70. Otherwise too axis bank shows good trends so investors can consider this stock.
- For HDFC bank, in the month of March the RSI is somewhere between 50-60 which means the investors should wait as it is expected to rise in future.
- For indusind bank in the month of March it is a risky time for the investors to sell their holdings since it is not near 60 or 70 but new investors can buy holdings at this point.
- For kotak Mahindra bank in the month of March it is seen that RSI is falling and therefore it is not a good time to sell but new investors can wait for the RSI to fall and then they can buy the shares.
- For Punjab national bank in the month of March it is seen that RSI touches 70 which show that the investors should sell their holdings as it is a good time to sell because market is showing overbought situation.
- For oriental bank of commerce in the month of March it is seen that for investors it is a safe situation as the RSI shows an upward trend and therefore investors can wait for it to rise and then sell their holdings since RSI is at 63.
- For state Bank of India in the month of March it is seen that it is rising so existing investors can wait to sell.
- For bank of India in the month of March it is seen that the RSI is rising and investors can now wait for it to rise and sell their shares.
- For syndicate bank in the month of March the RSI is at 60 so investors can wait for the RSI to rise and they can then sell their holdings. Otherwise, it is a risky investment so careful analysis is required.
- For federal bank in the month of March it is seen that the RSI is at 60 so investors can still wait for it to rise and then they can sell shares.
- For canara bank it is seen in March that the RSI is 50-55 so it is a safe position for investors to wait and later on they can sell their shares since the RSI shows an upward trend.
- For union bank of India it is seen that RSI is around 55-60 during March so investors can wait and then sell their shares.

7. SUGGESTIONS

- In order to make a good analysis of the stocks a combination of different indicators must be used before making any investment decision.

8. CONCLUSION

From the study conducted it is seen that RSI is an indicator about the movement of the stock and therefore it must be carefully analyzed before making any investment decisions. Conducting the technical analysis of the stocks helps in identifying how the share would move in future and with its help the decision about the entry in market and exit from the market can be made. However using different indicators or combination of indicators can help the investor in taking more wise decision.

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RESEARCH PAPER

STUDY ON FREQUENCY OF USING ATM CARDS AFTER DEMONETIZATION EFFECT IN PATAN CITY

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ABSTRACT

The Present study shows the ATM Cards availability and its usage among respondents and owners may feel they understand exactly what the services it represents. However, this image may be more reflective of their aspirations for the ATM Cards, rather than the reality of public opinion. Our research may be helping hand for the banks and consumer regarding their further study, services or use and preference for taking service decisions. The banking sector is the lifeline of any modern economy. It is one of the important financial pillars of the financial sector, which plays a vital role in the functioning of an economy. It is very important for economic development of a country that it's financing requirements of Trade, Industry and Agriculture are met with higher degree of commitment and responsibility.

KEYWORDS

Banking Scenario, ATM Card and Frequency Usage.

1. INTRODUCTION

In a modern economy, banks are to be considered not as dealers in money but as the leaders of development. They play an important role in the mobilization of deposits and disbursement of credit to various sectors of the economy. The banking system reflects the economic health of the country. The strength of an economy depends on the strength and efficiency of the financial system, which in turn depends on a sound and solvent banking system. A sound banking system efficiently mobilized savings in productive sectors and a solvent banking system ensures that the bank is capable of meeting its obligation to the depositors. In the last few year banking sector has introduce new products: Credit Cards, ATM, Tele-Banking, Electronic Fund Transfer (EFT), Internet Banking, Mobile Banking etc. These new products increase the efficiency of banks by reducing transactions cost.

On November 8, 2016, the Prime Minister of India, Narendra Modi, announced the demonetization of Rs.500 and Rs.1000 notes, withdrawing overnight 86% (by value) of cash in circulation, with a stated three-fold objective of fighting corruption, eliminating black money and countering money laundering. In place of the existing Rs.500 and Rs.1000 currency notes, new notes were introduced into the monetary system; the old Rs.500 note was replaced by new note of Rs.500, Rs.1000 note was discontinued and instead a new denomination of Rs.2000 note was introduced. The Government issued a deadline of 31st December 2016 to exchange all old notes for new notes at banks and placed several restrictions on withdrawal of money from banks and ATMs during this switch over. In the three to four months that followed the announcement, there was severe shortage of currency with banks being unable to meet the currency demand of their customers and Reserve Bank of India (RBI) falling short of printing new notes on a timely basis to supply to the banks, leading to empty ATMs and crowded banks for weeks on end and amounting to mismanagement of the monetary economic system at the highest level.

2. ATMS IN INDIA

In India, their takeoff took more time. In 1999, 12 years after their introduction, there were still only around 800 ATMs in the country. But in just a few years, the number would explode, crossing 10,000 in 2003. Even more impressive, as an article in TOI that year noted, the number of daily transactions per ATM had shot up from 50 in 1999 to 140 in 2003, while cash dispensed went up from Rs1,900 crore in 1999 to Rs 57,000 crore in 2003. Slowly but surely India was getting into the ATM habit. Banks helped by innovating in ATM placements and services. In 2004, the State Bank of India in Kochi launched a floating ATM, on a ferry plying between the jetties of Ernakulam and Vypeen in the city's huge bay. At the other end of India, SBI set up an ATM at Leh, 16,000 feet above sea level, primarily for the benefit of the armed forces.

CMS Infosystems manages approximately 55,000 of the 220,000 ATMs across India. Of the total number of ATMs, 60% are outsourced by banks and tend to be mostly off site. On a regular day, CMS visits close to 30,000 ATMs for replenishment across 92% of the districts in India. Since demonetisation, the number of ATMs CMS visits daily has not crossed 13,000, and is sometimes as low as 11,000. This depends on cash availability on a day-to-day basis.

3. LITERATURE REVIEW

Ron Borzekowski, Elizabeth K. Kiser, Shaista Ahmed (April 2006), Debit card use at the point of sale has grown dramatically in recent years in the U.S., and now exceeds the number of credit card transactions. However, many questions remain regarding patterns of debit card use, consumer preferences when using debit, and how consumers might respond to explicit pricing of card transactions. Using a new nationally representative consumer survey, this paper describes the current use of debit cards by U.S. consumers, including how demographics affect use.

Natarajan and Manohar (1993) "Credit Cards–an Analysis". A study has been attempted to know that to what extent the credit cards are utilized by the cardholders and the factors influencing the utilization of credit cards. The study is confined to cards issued by the Canara Bank. A random sampling technique is used to collect the data. Ten components i.e. numbers of purchases, shops, percentage of purchases, place, frequency, type of product, type of services, cash withdrawal facilities, add on facility, insurance schemes are identified and used for the measurement. Chi square test has been conducted to know the level of utilization.

Worthington (1995), "The cashless society" paper describes the cashless society, where clumsy and expensive-to handle coins and notes are replaced by efficient electronic payments initiated by various types of plastic cards is a tantalizing prospect for the twenty-first century. Some of the interested parties stand to gain more than others if the cashless society becomes a reality. Paper outlines the rationale of those who are keen to promote the cashless society and the implications for marketers charged with winning consumer acceptance for payment by plastic card.

4. INTRODUCTION OF TOPIC

Technology innovation and economic development are positively correlated. Invention of technology has become popular and useful for financial services. Old fashioned Banks have now jumped into the platform of modern technological environment. Before introducing ICT (Information and Communication Technology) in the banking sector, ledgers were being maintained, brick and mortar system was accepted and each transaction was both time and energy consuming, but now with the advent of technology in this sector the work has been speeded up

and a single card swiping in the machine can shower money.

The study has factors and asked respondents to answer the reasons for accepting or adopting new technology like ATM Service in Banking transactions. Adam smith, Father of economics in his 'Wealth of Nations' had discussed about the division of labour and varieties of machines and opined that inventions of machines encourage labour force to produce more output with good productivity. John Schumpeter (1883 – 1950) in his theory of innovation stated that anything stagnated in the state does not yield any profit, but when innovation takes place it disturbs steady state and brings profit.

4.1 TRENDS AND DEVELOPMENTS

- Increasing Number of ATM's
- Introduction of Solar ATM's
- Introduction of Biometric ATM's
- Increasing Penetration of White Label ATM's in Rural Areas
- Growth in Branchless Banking
- Higher Number of Outdated ATM's
- Government Efforts to Increase Deployment of Cash Recyclers

4.2 ISSUES AND CHALLENGES

- Power Cuts and Deficit
- Pressure on Profit Margins
- Decline in Number of Free Transactions at ATM's
- Low Interchange

Awareness, attitudes, and usage (AAU) metrics relate closely to what has been called the Hierarchy of Effects, an assumption that customers progress through sequential stages from lack of awareness, through initial purchase of a product, to brand loyalty. AAU metrics are generally designed to track these stages of knowledge, beliefs, and behaviours. AAU studies also may track "who" uses a brand or product—in which customers are defined by category usage (heavy/light), geography, demographics, psychographics, media usage, and whether they purchase other products.

5. RESEARCH METHODOLOGY

Research Objectives of study

- To study consumer behavior of customers towards usage of ATM Cards
- To find out the various factors affecting frequency of use regarding ATM Cards
- To study Demographic variable (age, Gender, income, Occupation, Family size)
- To study whether satisfaction level effects frequency for usage of ATM cards

Research Hypothesis

- H0: There is no significance difference between Gender and Age in usage of ATM Cards
- H0: There is positive impact of frequency for using ATM Cards on consumer satisfaction

Research Design: Descriptive research Design

- Primary Data collection through Observation, survey, Interview.
- Secondary Data collection through books, journals, websites links.

Sampling Frame: Customers using Different Bank's ATM Cards for different objectives in Patan city.

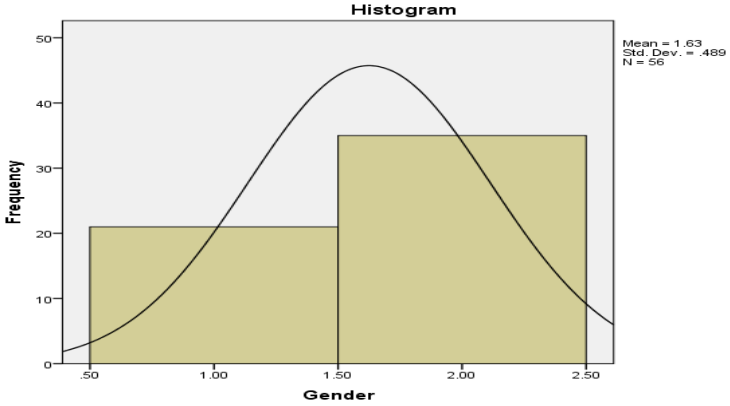
- **Sample Size:** Total sample are 60 surveyed
- **Sampling Method:** Non probability judgmental sampling
- **Data Collection Tools/Techniques:** through Questionnaire
- **Data Analysis Tools:** Collected Data would be analyzed by pie chart, column chart, bar chart with frequency distribution, cross tabulation, Chi-square test and ANOVA.

Limitations of study

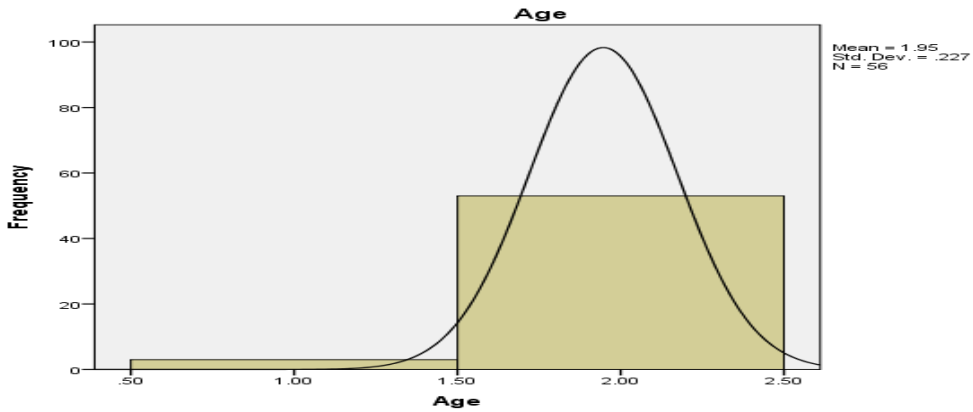
- Time factor February 2019 only
- Resource constraints (Respondent bias)
- Geographical constraints (city only)

6. DATA ANALYSIS AND INTERPRETATION

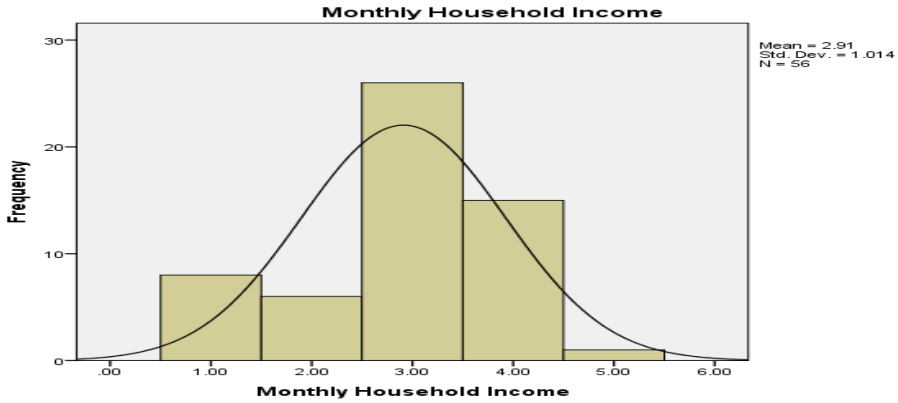
Gender Frequency Distribution



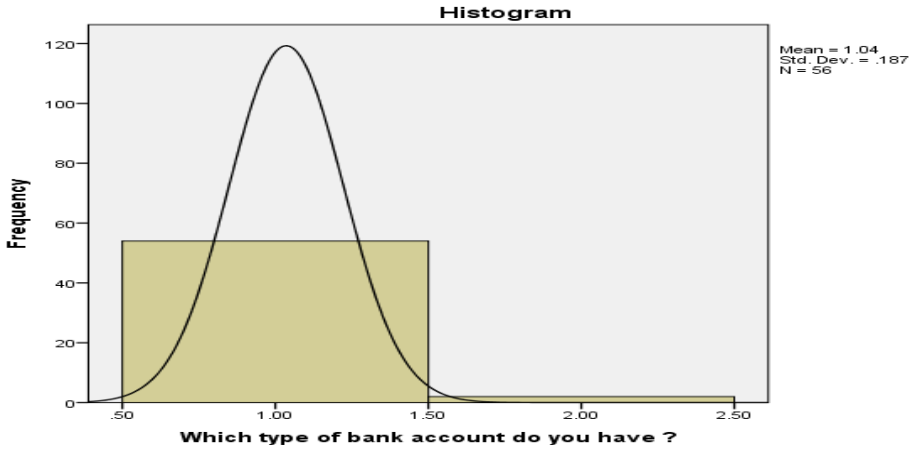
Age frequency distribution



Monthly household frequency distribution



Which type of bank accounts do you have?



How did you come to know about requirement of ATM cards?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1= Television	6	10.7	10.7	10.7
	2= Magazines	3	5.4	5.4	16.1
	3= Friends/Relatives influenced	26	46.4	46.4	62.5
	4= Bank employees approach	15	26.8	26.8	89.3
	5= Opportunity through college	6	10.7	10.7	100.0
	Total	56	100.0	100.0	

What factors necessarily made you to opt for ATM card from this bank only?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1= Service	22	39.3	39.3	39.3
	2= Security	21	37.5	37.5	76.8
	3= Locality	5	8.9	8.9	85.7
	4= Discount on use	2	3.6	3.6	89.3
	5= More withdrawal facility	6	10.7	10.7	100.0
	Total	56	100.0	100.0	

How often do you use ATM cards?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2=2-3 times a week	7	12.5	12.5	12.5
	3=Four times a week	7	12.5	12.5	25.0
	4=Once a week	24	42.9	42.9	67.9
	5=Once a month	18	32.1	32.1	100.0
	Total	56	100.0	100.0	

Chi – Square Test

Chi-Square Tests					
	Value	Df	Asump. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.936[a]	1	.333		
Continuity Correction[b]	.132	1	.717		
Likelihood Ratio	.915	1	.339		
Fisher's Exact Test				.558	.350
Linear-by-Linear Association	.920	1	.337		
N of Valid Cases	60				
a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.20.					
b. Computed only for a 2x2 table					

7. INTERPRETATION

At the level of 5% significance and degree of freedom 1. The output of the chi square analysis according to p value approach is as follows: P value > Table value (0.333 > 0.05) Therefore H0 is accepted There is no significance difference in gender and age.

ANOVA Test

ANOVA					
Gender					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.225	1	.225	.919	.342
Within Groups	14.175	58	.244		
Total	14.400	59			

8. INTERPRETATION

This is the table that shows the output of the ANOVA analysis and whether there is a statistically significant difference between our group means, we can see that the significance value is 0.342, which is above 0.05, and therefore H0 will be accepted and H1 will be rejected. There is no statistically significant difference in the Gender and age.

9. FINDINGS

- **Gender:** The researcher Can concluded that more respondents belong to female category than Male category from the sample unit.
- **Age Group:** Maximum number of sample respondents belongs to the age group of 21 – 30 years and the lowest number of sample respondents belongs to the age group of below 20 years.
- **Educational Qualification:** Majority of the respondents belongs to collegiate level and the lowest number of the respondents belongs to Illiterates.
- **Occupational Pattern:** A large number of respondents belong to other students' categories and lower number of respondents belongs to agriculture.
- **Persons who are using ATMs cards:** A large majority of the respondents use ATM cards by them alone.
- **Holding of number of banks ATM cards:** Majority

of the respondents use Single bank's ATM card.

- **Number of times of using ATMs per day:** A large majority of the Respondents is using the ATMs only once per day.
- **Purpose of using ATMs:** Majority of the respondents use ATMs for cash withdrawal rather than for other services.

10. SUGGESTIONS

- Younger customers of the bank use these services more than the older generation.
- Banks must make efforts to educate them as well in the use of ATMs.
- Banks may also draw up special incentive schemes to induce customers to make maximum use of ATMs. Number of banks own ATMs must be increased.
- As the numbers of ATMs are fewer, customers are forced to use off-site ATMs which form part of shared network and have to pay higher charges after the 5th transaction in a month.
- Cooperative Banks must offer a better variety of services through ATMs. At present they are very limited in number.
- ATMs must be maintained properly by banks. Banks must ensure that uptime is near 100%. Air conditioners, UPS systems, key boards, Monitors etc. must always be in proper working condition.
- Cash refilling at proper intervals must be made to ensure that cash does not get over in the cash stacks. This care should be taken over weekends and during holidays.
- Problems of technical nature resulting in debiting of customer account without dispensing of cash should be rectified urgently.
- Care must be taken to ensure that such problems do not occur at all.
- Paper for receipt printing must always be available in the ATM centre and efforts should be made to refill the paper roll in time to avoid inconvenience to customers.
- Banks should ensure that the printing on the paper receipt is clear and of good quality.
- The system of transacting through ATM must be speedy, accurate and reliable. Banks must ensure that the technology adopted by them is the latest and most efficient.

11. CONCLUSION

Banking through ATM has not only transformed traditional banking but has also brought a uplifting shift in the attitude of banks to banking operations. It is evident from the present study that a majority of the customers are highly satisfied with ATM services and view them as essential services. The customers prefer ATM with time and cost utility which provides efficient services. Despite drawbacks in ATMs, it is still preferred as it benefits the bank, employees and customers. It is thus, imperative for banks to ensure that undisrupted and efficient ATM service is provided to customers for best results. If the study provokes the authority concerned to take some positive measures for improving the effectiveness of ATMs, the researcher will feel aptly rewarded.

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[4] http://www.informit.com/articles/article.aspx?p=463943&seqNum=8

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RESEARCH PAPER

ECONOMICS OF DAIRYING

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ABSTRACT

Dairying is considered as an important economic activity of our country which contributes to the main source of income to the majority of rural population, particularly the weaker section. It provides subsidiary occupation in rural area and provides gainful employment to the under employed. Because of these peculiar features, the present study enables to provide an in-depth understanding of the income and expenditure pattern of dairying, the contribution of net income from dairying to the total income and also the benefit cost ratio analysis so as to study the economics of dairying in detail.

KEYWORDS

Dairy Farmer, Dairy Co-operative Society, Member, Non-Member.

1. INTRODUCTION

Dairy industry is one of the most rapidly developed industries in India. A dairy holding enterprise is a profitable complementary enterprise in agriculture and also be compared with a manufacturing or production enterprise where the milch animal is the machine, the raw material is feeds and fodder, and the final product is milk. It is because of this profitable nature, most of the cultivating households irrespective of the size of their land holding continues to rear cattle and has become an integral part of Indian agriculture. However due to the recent hike in the production cost and other problems which they are facing, the farmers are forced to quit this sector and there exist a demand supply gap in the milk production which may even force to depend on the neighbouring States for meeting the consumption needs. And this questions the viability of dairying. In this context, it is pertinent to study the feasibility of dairying thereby to analyse the sustainability of dairy farmers.

2. REVIEW OF LITERATURE

To ensure the sustainability of dairying, dairy farmers should be sustainable. By analyzing the economics of dairying, it is possible to study the cost and return structure and thus the association of dairy farmers towards dairying can be studied. The dairy farmers exist in this sector only if they find it as viable for them. Thus the studies related to this aspect throw light on an important issue.

Parthasarathy (1975) studied the economics of milk production and trade covered on hundred dairy farmers supplying milk to the Integrated Milk Project (I.M.P), Vijayawada, Krishna district of Andhra Pradesh. The input output ratios, cost components were analyzed. They revealed that the average input output ratio was 1.31 per animal and the average yield was 2024 lts per lactation and the total cost of maintenance was Rs 3112 and 85 percent of it was on feeds. Most of the milk trade was with private agencies and only one fourth was with I.M.P.

Alam*et al*. (1995) conducted a study titled "Economics of mini dairy farms in selected areas of Bangladesh". The objective of the study was to evaluate the Economics of Dairy Farms in selected areas of Bangladesh. Two thana (Thana is an administrative unit of local government consisting of several union councils), savar and Manikgonj of greater Dhaka district in Bangladesh were selected for this study. Twenty farms were selected randomly; ten from each thana and the selected farms were classified by herd size into three categories- small, medium and large. A survey schedule was prepared and pretested in the field before final collection of data. The collected data were analyzed using statistical techniques such as mean, percentages and ratio's for better precision of analysis. The study revealed that the mini Dairy farming is economically profitable. In addition, each farm created an annual employment opportunity of 649.70 man days which was met by both male and female laborers. And the expansion of dairy farming with cross- bred cows is suggested for accelerating income and employment opportunities in rural Bangladesh.

Kabir and Talukder (1999) designed a study titled "Economics of small scale dairy farming in Bangladesh under the Government Support Programme" to assess the financial performance of newly established commercial dairy farmers for one complete year of operation. The data were collected by the researcher himself through personal interview with the individual dairy farmers. The study revealed that the Government intervention in the form of subsidy on dairy cows helped small scale dairy farmers to expand their size. The intervention resulted in significant increase in milk production and consumption by farm families. It also provided opportunities for increased employment of persons in dairy businesses. It could also be noted that profit was greater with cross-bred than with local-bred cows. The impression gained from the field visits suggests that financial support provided by the Government has given remarkable stimulus to the small private investors to undertake dairy farming particularly for those having capital constraints.

Rao *et al.* (2004) made an in-depth study on the economics of milk production in Kanpur (dehat) district of Uttar Pradesh. Two blocks from the selected district and five villages from each selected blocks were selected randomly. The study revealed that the total maintenance cost of a milch animal per lactation increased as farm size increased. Among all, labour charges accounted for the highest share followed by fodder and concentrates. The gross income from milk production was higher on large farmers because of excess utilization of concentrates by large farmers. Input output ratio was the highest on small farmers and it was 1:1.31.Elasticity of production for fodder was the highest followed by human labour and concentrates for all farms.

Velanganni (2013) dealt with a study titled "Income and expenditure pattern of Samichettipalayam milk producers co-operative society in Coimbatore district: A survey". The objectives of the study are to examine the Income and Expenditure pattern of Samichettipalayam Milk Producers Co-operative Society, to know whether there are differences among Milk Producers with respect to their Income and Expenditure, to know whether there are variations in the Income and Expenditure among Milk Producers, to know whether there exist a relationship between the socio-economic factors and the Income and Expenditure pattern of Milk Producers and also to understand how the Milk Producers maintain their family during periods of less Income. Structured Interview Schedule was administered among 50 milk Producers selected on a simple random basis. Data gathered through the Structured Interview schedule was compiled and analyzed with the help of Statistical Package for Social Science (SPSS). Two way tables were prepared and the data were analyzed with the help of simple averages and Percentages. To disclose the relationship between and among variables, Chi- Square and Correlation Analysis are

employed facilitating for testing of Hypothesis. The study finds no significant relationship between all the demographic, social and economic factors and Income level of the respondents. The study proves that expenditure pattern has close association with Income level and expenses increases when Income Increases. However the money spending on food expenses takes away larger portion of the Income particularly among Milk Producers earning less Income. Hence the study suggests that social security measures have to be implemented particularly for the benefit of less Income people. Further, during periods of less Income, majority of the milk producers maintain their family out of petty loans and advances, that too to meet out their food expenses.

The above studies bear evidence to the fact that financial support from the part of Government has of great relevance to undertake dairy farming particularly for those having capital constraints and will enable dairying to be more economically profitable.

3. OBJECTIVES

- To study the Income and expenditure pattern of dairying: both member-wise and category- wise (based on the cattle population) comparison
- To study the contribution of net income from dairying to total income: both member-wise and category- wise (based on the cattle population) comparison
- To study the feasibility of dairying using benefit cost ratio: Both member-wise and category- wise (based on the cattle population) comparison

4. RESEARCH METHODOLGY

4.1 SOURCES OF DATA

Primary data comprised of the various expenses and Income have been obtained from the dairy farmers through the sample survey. The various expenses for a dairy farmer include feed cost, labour cost, veterinary cost, transportation cost, fodder production cost and insurance cost. The various sources of income for a dairy farmer include sale of milk, sale of cowdung, sale of cattle, sale of curd, ghee and gobar gas. Pre-tested structured interview schedule has been used for collecting data from the respondents.

4.2 SELECTION OF THE SAMPLE

Multi-stage random sampling was used to select 133 respondents from Thrissur district. Multi-stage sampling refers to sampling plans where the sampling is carried out in stages using smaller and smaller sampling units at each stage. In the first stage, from each Taluk, two Anand Pattern Co-operative Societies (APCOS) have been selected for which the societies in the Taluks have been ranked based on the quantity of milk supplied to MILMA during the last three years. From the rank list prepared, societies which ranked first and last have been selected. Thus the sample size of APCOS is ten, i.e., two societies each from five Taluks. In the second stage, from each of the societies, 10 farmers who are pouring members for the last three years have been selected randomly. As a control group for comparison, three farmers who are not the members of the society, but residing within the area of operation of the society have been selected. Thus the sample size is 130 dairy farmers, consisting of 100 member farmers of APCOS and 30 non member farmers. In addition to this, three commercial dairy units from the study area having a minimum cattle holding of 20, have also been included for the study.

4.3 STATISTICAL TOOLS USED FOR THE STUDY

The objectives were analysed with the help of Independent samples t-test, One-way analysis of variance (ANOVA) and Post-hoc test for multiple comparisons.

4.4 INDEPENDENT SAMPLES T-TEST

The Independent samples t- test compares the means of two independent groups in order to determine whether there is statistical evidence that the associated population means are significantly different. The independent t test is a parametric test. This test is also known as Independent t test, Independent measures t test, Independent two samples t test, Student t test, Two samples t test, Uncorrelated scores t test, Unpaired t test and Unrelated t test. The variables used in this test are known as dependent variable or test variable, independent variable or grouping variable. The data must meet the following requirements. Dependent variable should be continuous, (Interval or ratio level) independent variable should be categorical,(two or more groups) Cases that have values on both the dependent and independent variables and independent samples or groups. (Independence of observations) In this study, the independent samples t-test is used for studying whether there is any significant difference between the members and non- members on the identified critical variables.

4.5 ONE-WAY ANALYSIS OF VARIANCE (ANOVA)

ANOVA test has been done for comparing the expenditure pattern of dairying among the four categories of respondents. ANOVA is used to compare the means of more than two populations. It uses F-statistic, which tests whether the means of groups, formed by one independent variable or a combination of independent variables are significantly different. It is based on the comparison of two estimates of variances - one representing the variance of within groups, often referred to as error variance and other representing the variance due to differences in group means. If the two variances do not differ significantly, one can believe that all the group means come from the same sampling distribution of means and there is no reason to claim that the group means differ. The F-statistic calculates the ratio between the variance due to difference between groups and error variance.

F = Variance due to difference between groups / Error variance

The larger the F- ratio, the greater is the difference between groups as compared to within group difference. An F ratio equal to or less than one indicates that there is no significant difference between groups and the null hypothesis is correct. If the F- test proves the null hypothesis to be wrong, multiple comparison tests are used to further explore the specific relationship among different groups.

4.6 POST-HOC TEST FOR MULTIPLE COMPARISONS

Rejection of null hypothesis in ANOVA only indicates that all population means are not equal. Multiple comparisons are used to assess which group means differ from which others, once the overall F-test shows that at least one difference exists. Turkey HSD (honestly significant difference) was used in the present study, which is one of the most conservative and commonly used test.

5. DATA ANALYSIS AND INTERPRETATION

Economics of dairying helps to study the feasibility of undertaking dairying. It involves the income and expenditure pattern of dairy farmers. As far as a dairy farmer is concerned, the economics of dairying holds great significance. Various expenses incurred under dairying and income generated out of it have been analysed for finding out the feasibility of undertaking dairying activity. The major expenses such as feed cost, labor cost and transportation cost have been considered both category wise and member wise. Independent samples t-test has been done separately for members and non- members in each category. ANOVA test has been done for comparing the expenditure pattern of dairying among the four categories of respondents. Sale of milk, which is one of the major income from dairying have been taken for member, non- member and farm for studying its percentage share to total income.

5.1 EXPENSES INCURRED UNDER DAIRYING

The various expenses for a dairy farmer include feed cost, labour cost, veterinary cost, transportation cost, fodder production cost and insurance cost. Among these, veterinary cost and insurance cost constitute a meagre percent. The major expenses such as feed cost, labour cost and transportation cost are analysed separately both category wise and member wise for studying its percentage share to total expense.

Table 1.1 indicates the percentage share of feed cost to total cost. The respondent farmers are grouped into four categories namely those who have one to two cattle, those who have three to five cattle and those who have six to ten cattle and farm units of those who have more than ten cattle

Table 1.1: Percentage of feed cost to total cost

per cent of Feed cost to total cost (in %)	No. of respondents								Total
	Category 1 (1-2 cattle)		Category 2 (3-5 cattle)		Category 3 (6-10 cattle)		Category 4 (More than 10 cattle)		
	Member	Non-member	Member	Non-member	Member	Non-member	Member	Non-member	
Below 25	1(2)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	1(1)
25-50	5(11)	0(0)	6(20)	1(7)	2(8)	0(0)	0(0)	0(0)	14(10)
50-75	39(87)	12(100)	24(80)	14(93)	23(92)	3(100)	2(67)	0(0)	117(88)
75-100	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	1(33)	0(0)	1(1)
Total	45(34)	12(9)	30(23)	15(11)	25(19)	3(2)	3(2)	0(0)	133
Average cost (in Rs.)	40473	50359	91327	97416	172887	189227			
Average cost category wise (in Rs.)	42554		93357.		174638		1002336		
t value	$-1.925^{*}\{.020\}$		$-2.167^{*}\{.012\}$		$.145^{NS}\{.885\}$				

Source: Compiled from primary survey

Note Figures in single bracket represent percentage to total

Note Figures in double bracket represent p value of t- statistic

Table 1.1 indicates the percentage share of feed cost to total cost for four categories of respondents which is again categorized as members and non- members. Feed cost is a major share of the total cost which includes the cost of both concentrates and roughages. Concentrates include pellet feed and other hard feeds. From the Table, it could be observed that a major percent of the respondent farmers irrespective of the four categories incur more than 50 per cent, but less than 75 percent of feed cost to the total cost. The survey also revealed that the feed cost is comparatively less for members when compared to the non-members in the first two categories. In the farm category, 100 percent of the respondent farmers incur feed cost between 50 to 100 percent of the total cost. From this, it could be implied that feed cost constitutes a major share of the total cost for all the four categories. In order to know whether there is significant difference between members and non- members in the percent of feed cost to total cost, Independent samples t-test was used. The results of Independent samples t-test as revealed in Table 1.1 depicts that there is significant difference in the percent of feed cost to total cost for members and non- members in the first and second category. Since the members are receiving various assistance in the form of subsidies, the average percent of feed cost is found to be less for members when compared to the non- members. In order to check whether there is any significant difference between the four categories of respondents, Analysis of variance (ANOVA) test has been used and the results of which are given in Table 1.2.

Table 1.2: Analysis of variance of percent of feed cost to total cost among four categories

Sl. No.	Categories	Average cost category wise (in Rs.)	F	p value
1	Category 1	42554	3.231*	0.025
2	Category 2	93357.		
3	Category 3	174638		
4	Category 4	1002336		

The results of ANOVA test point to the fact that there is significant difference among the respondents in the percent of feed cost to total cost. In order to know in which among the categories does this significant difference exists, Post- hoc test has been applied and the results are shown in Table 1.3.

Table 1.3: Results of post- hoc test of percent of feed cost to total cost among four categories

Sl. No.	Mean percent	Type of respondents	Category 1 (1-2 cattle)	Category 2 (3-5 cattle)	Category 3 (6-10 cattle)	Category 4 (more than 10)
1	58.1053	Category 1 (1-2 cattle)		0.590^{NS}	0.996^{NS}	0.047*
2	56.4000	Category 2 (3-5 cattle)	0.590^{NS}		0.842^{NS}	0.015*
3	57.7500	Category 3 (6-10 cattle)	0.996^{NS}	0.842^{NS}		0.045*
4	68.6667	Category 4 (more than 10)	0.047*	0.015*	0.045*	

The results of Post- hoc test reveal the fact that significant difference exists between categories four with other three categories of respondents in the percent of feed cost to total cost. The average percent of feed cost to total cost is found to be more for farm units when compared to other three categories. As the quantity of each feed except paddy straw is more for farm units, the same is reflected in their cost also.

Table 1.4 indicates the percentage share of labour cost to total cost. The respondent farmers are grouped into four categories namely those who have one to two cattle, those who have three to five cattle and those who have six to ten cattle and farm units of those who have more than ten cattle.

Table 1.4: Percentage of labor cost to total cost

per cent of labor cost to total cost (in %.)	No. of respondents								Total
	Category 1 (1-2 cattle)		Category 2 (3-5 cattle)		Category 3 (6-10 cattle)		Category 4 (More than 10 cattle)		
	Member	Non-member	Member	Non-member	Member	Non-member	Member	Non-member	
Below 20	0(0)	1(8)	0(0)	0(0)	0(0)	0(0)	3(100)	0(0)	4(3)
20-40	37(82)	9(75)	21(70)	14(93)	20(80)	2(67)	0(0)	0(0)	103(77)
40-60	8(18)	2(17)	9(30)	1(7)	5(20)	1(33)	0(0)	0(0)	26(20)
Total	45(34)	12(9)	30(23)	15(11)	25(19)	3(2)	3(2)	0(0)	133
Average cost (in Rs.)	23847	22813	59434	55845	105018	118625			
Average cost category wise (in Rs.)	23629		58238		106476		236000		
t value	$1.767^{NS}\{.083\}$		$1.688^{NS}\{.099\}$		$-.146^{NS}\{.885\}$				

Source: Compiled from primary survey
Note: Figures in single bracket represent percentage to total
Note: Figures in double bracket represent p value of t- statistic

Table 1.4 indicates the percentage share of labour cost to total cost for four categories of respondents which is again categorized as members and non-members. Labour cost is the second major cost next to feed cost in dairying. The labour that comes under dairying includes cleaning shed, watering and feeding animals, cutting grass for feeding purpose, milking, sale of milk and processing of milk and milk products. Since dairying is a round the clock job, it requires labour for its profitable survival. It starts from the early morning by doing various activities like cleaning cattle, feeding (collecting roughages like green grass), milching, taking milk to the society for sale etc. It could be seen that majority of the individual dairy farmers are doing all these activities by themselves. As dairying is an income generating activity, it could be considered as an employment generation, and for those who undertake all these activities by themselves, opportunity cost has been considered. From the Table, it could be inferred that irrespective of the four categories of respondents, 77 percent of the respondent farmers incur more than 20 percent, but less than 40 percent of the labour cost to total cost. The labour cost is found to be more for members when compared to the non- members in the first two categories of respondents. It could also been seen that 100 percent of the farm respondents incur less than 20 percent of labour cost to total cost. This implies that labour cost is less for dairy farms because of its large scale rearing when compared to the other three categories of respondents. The results of Independent samples t-test revealed that there is no significant difference between members and non- members in the percent of labor cost to total cost for all the three categories of respondents. In order to examine whether there is significant difference in the percent of labor cost to total cost, Analysis of variance (ANOVA) test has been used and the results are presented in Table 1.5.

Table 1.5: Analysis of variance of percent of labour cost to total cost among four categories

Sl. No.	Categories	Average cost category wise (in Rs.)	F	p value
1	Category 1	23629	10.313^{**}	0.000
2	Category 2	58238		
3	Category 3	106476		
4	Category 4	236000		

The results of ANOVA test as depicted in Table 1.5 point to the fact that there is significant difference among the four categories of respondents. In order to find out in which among this significant difference exists, Post- hoc test has been

applied and the results of which are given Table 1.6.

Table 1.6: Results of post-hoc test of percent of labour cost to total cost among four categories

Sl. No.	Mean percent	Type of respondents	Category 1 (1-2 cattle)	Category 2 (3-5 cattle)	Category 3 (6-10 cattle)	Category 4 (more than 10)
1	33.0526	Category 1 (1-2 cattle)		0.064^{NS}	0.250^{NS}	0.000^{**}
2	36.3556	Category 2 (3-5 cattle)	0.064^{NS}		0.991^{NS}	0.000^{**}
3	35.89	Category 3 (6-10 cattle)	0.250^{NS}	0.991^{NS}		0.000^{**}
4	16	Category 4 (more than 10)	0.000^{**}	0.000^{**}	0.000^{**}	

The results of post-hoc test of percent of labour cost to total cost among four categories of respondents reveal the fact that significant difference exists between categories four with other three categories of respondents. The average percent of labor cost to total cost for farm units is found to be less when compared to the other three categories of respondents and it is because of the per labour investment for more number of cattle and the advantage of economies of large scale rearing available for them.

Table 1.7 indicates the percentage share of transportation cost to total cost. The respondent farmers are grouped into four categories namely those who have one to two cattle, those who have three to five cattle and those who have six to ten cattle and farm units of those who have more than ten cattle.

Table 1.7: Percentage of transportation cost to total cost

Per cent of Transportation cost to total cost (in %)	No. of respondents								Total
	Category 1 (1-2 cattle)		Category 2 (3-5 cattle)		Category 3 (6-10 cattle)		Category 4(More than 10 cattle)		
	Member	Non-member	Member	Non-member	Member	Non-member	Member	Non-member	
Below 10	37(82)	10(83)	28(93)	15(100)	25(100)	3(100)	2(67)	0(0)	120(90)
10-20	7(16)	2(17)	2(7)	0(0)	0(0)	0(0)	0(0)	0(0)	11(8)
20-30	1(2)	0(0)	0(0)	0(0)	0(0)	0(0)	1(33)	0(0)	2(2)
Total	45(34)	12(9)	30(23)	15(11)	25(19)	3(2)	3(2)	0(0)	133
Average cost (in Rs.)	5244	6052	10325	9611	15432	16556			
Average cost category wise (in Rs.)	5414		10087		15553		200800		
t value	-0.799^{NS}{.428}		0.510^{NS}{.613}		-0.273^{NS}{.787}				

Source: Compiled from primary survey
Note: Figures in single bracket represent percentage to total
Note: Figures in double bracket represent p value of t- statistic

Table 1.7 describes the percentage share of transportation cost to total cost for four categories of respondents which is again categorized as members and non-members. Transportation cost is the cost incurred by a dairy farmer for undertaking various activities like collecting the feed from the society, taking milk to the society, for making local sale etc. From the Table, it could be noted that, irrespective of the cattle population, 90 percent of the member and non-member respondent farmers incur below ten percent of transportation cost to total cost. In the case of farm also, a major percent of the total respondents incur transportation cost below ten percent of the total cost. Independent samples t-test revealed the fact that the transportation cost is independent of membership in all the three categories of respondents. In order to examine whether there is significant difference among the four categories of respondents in the percent of transportation cost to total cost, Analysis of variance (ANOVA) test has been done and the results of which are given in Table 1.8.

Table 1.8 Analysis of variance of percent of transportation cost to total cost among four categories

Sl. No.	Categories	Average cost category wise (in Rs.)	F	p value
1	Category 1	5414	10.137**	0.000
2	Category 2	10087		
3	Category 3	15553		
4	Category 4	200800		

The results of ANOVA test as depicted in Table 1.8 tilt to the fact that significant difference exists among the four categories of respondents in the percent of transportation cost to total cost. In order to examine among which categories this significant difference exists, Post- hoc test has been employed and the results are shown in Table 1.9.

Table 1.9: Results of post- hoc test of percent of transportation cost to total cost among four categories

Sl. No.	Mean percent	Type of respondents	Category 1 (1-2 cattle)	Category 2 (3-5 cattle)	Category 3 (6-10 cattle)	Category 4 (more than 10)
1	7.4386	Category 1 (1-2 cattle)		0.093^{NS}	0.003**	0.004**
2	6.0889	Category 2 (3-5 cattle)	0.093^{NS}		0.462^{NS}	0.000**
3	5.0714	Category 3 (6-10 cattle)	0.003**	0.462^{NS}		0.000**
4	13.333	Category 4 (more than 10)	0.004**	0.000**	0.000**	

The results of Post- hoc test of percent of transportation cost to total cost among four categories reveal the fact that significant difference exists between category four with other three categories of respondents and also between category one and three. The percent of transportation cost is found to be more for category four when compared to the other three categories. As the farm units require bulk quantities of feed when compared to other categories of respondents, transportation cost will be incurred each day for collecting green grass, paddy straw etc and this makes them difference in cost when compared to other categories.

5.2 SOURCES OF INCOME FROM DAIRYING

The various sources of income for a dairy farmer include sale of milk, sale of cowdung, sale of cattle, sale of curd, ghee and gobar gas. Since sale of milk remains the major portion of income and other sources constitutes a meagre percent, income from sale of milk is analysed separately for member, non- member and farm for studying its percentage share to total income.

Table 1.10 shows the percentage share of income from sale of milk to total income for members, non- members and farm. Income from sale of milk is a major source of income for dairy farmers for meeting their livelihood expenses. Any problem in earning this amount will make dairying less profitable and sustainable. The major two sources of marketing avenues for the dairy farmers are societies and local sale. The average price received by the farmer respondents for one litre of milk from the society is twenty nine rupees and through local sale is rupees thirty nine.

Table 1.10: Sale of milk to total income

Percentage (in %)	Group			Total
	Member	Non member	Farm	
25-50	2(2)	1(3)	0(0)	3(2)
50-75	10(10)	7(23)	1(33)	18(14)
75-100	88(88)	22(74)	2(67)	112(84)
Total	100	30	3	133

Source: Compiled from primary survey

From the Table, it could be observed that about eighty four percent of the total respondents earn more than seventy five percent of their total income from the sale of milk. In the member category, eighty eight percent of the total respondents earn more than seventy five percent of the income from the sale of milk. And only two percent of respondents earn between twenty five to fifty percent. In the non- member category, seventy four percent of the total respondents earn more than seventy five percent of their income from the sale of milk.. Only twenty three percent of the total respondents earn fifty to seventy five percent of income from sale of milk. In the case of farm also, a major percent of the respondents earn more than seventy five percent of their income from the sale of milk.

6. CONTRIBUTION OF NET INCOME FROM DAIRYING TO TOTAL INCOME

Net income from dairying is obtained by deducting the cost incurred under dairying from the gross income earned under dairying. The percentage of contribution of net income from dairying towards the total income of the dairy farmers is analysed category wise and member wise. Independent samples t-test is used for comparing members and non- members and Analysis of variance (ANOVA) test is used for knowing whether there is any significant difference between the four categories of respondents.

Table 1.11 indicates the contribution of net income to total income of the dairy farmers. The dairy farmers are categorized into four categories namely those who have one to two cattle, those who have three to five cattle , those who have six to ten cattle and the farm units who have cattle population above ten in number is categorized as the fourth category.

Table 1.11: Contribution of net income from dairying to total income

per cent of net income to total income (in %)	No. of respondents								Total
	Category 1 (1-2 cattle)		Category 2 (3-5 cattle)		Category 3 (6-10 cattle)		Category 4 (More than 10 cattle)		
	Member	Non-member	Member	Non-member	Member	Non-member	Member	Non-member	
Below 15	31(69)	9(75)	19(63)	11(73)	18(72)	1(33)	1(33)	0(0)	90(68)
15 – 30	13(29)	2(17)	8(27)	3(20)	6(24)	2(67)	2(67)	0(0)	36(27)
30 – 45	1(2)	1(8)	1(3)	1(7)	0(0)	0(0)	0(0)	0(0)	4(3)
45 – 60	0(0)	0(0)	2(7)	0(0)	1(4)	0(0)	0(0)	0(0)	3(2)
Total	45(34)	12(9)	30(23)	15(11)	25(19)	3(2)	3(2)	0(0)	133

Source: Compiled from primary survey

From the Table, it could be obtained that irrespective of all the four categories, majority of the respondents have contribution from their net income of dairying to the total income below 15 percent. Only five percent of the respondents could contribute above 30 percent of their total income from the net income of dairying. This tilts to the fact that the net income contribution from dairying to total income constitutes a meagre percent which the farmers can use it for meeting the day to day livelihood expenses. In order to check whether there is any significant difference between the members and non- members in their contribution of net income from dairying to total income, Independent samples t-test was used and the results of which are given in Table 1.12.

Table 1.12: Results of Independent samples t-test of percentage of net income to total income for members and non- members

Sl. No.	Membership	t value	p value
1	Members	0.640^{NS}	0.523
2	Non-members		

The results of Independent samples t-test as depicted in Table 1.12 reveal that there is no significant difference between members and non- members in their contribution of net income from dairying to total income. However, the average percent of net income is found to be more for members when compared to the non- members. In order to know whether there is significant difference among the four categories of respondents, Analysis of variance (ANOVA) test has been

employed and the results are shown in Table 1.13.

Table 1.13: Analysis of variance of percent of net income from dairying to total income among four categories of respondents

Sl. No.	Categories	F	p value
1	Category 1	0.998^{NS}	0.396
2	Category 2		
3	Category 3		
4	Category 4		

The results of ANOVA as shown in Table 1.13 tilt to the point that there is no significant difference among the four categories of respondents in their contribution of net income from dairying to their total income. The average percent of each four categories hovers around ten and below ten percent. It could also be observed that the average percent of the contribution of net income is found to be more for category two of those who have three to five cattle followed by category one of those who have one to two cattle.

6.1 BENEFIT COST RATIO

Benefit cost ratio (BCR) is a ratio attempting to identify the relationship between costs and benefits of a proposed project. Project with a benefit cost ratio greater than one have greater benefits than costs. Benefit cost ratio has been employed in the study to know the benefit and cost analysis of dairy farmers. Benefit cost ratio has been obtained by dividing the gross income by gross expenses. The gross income of a dairy farmer consists of income from sale of mik, value added items, cattle, cowdung and also from the use of gobar gas. The various expenses of a dairy farmer consist of feed cost, labor cost, transportation cost, veterinary cost, insurance cost and fodder production cost. Category wise and member wise classification of benefit cost ratio has been analysed and the results of which are presented in Table 1.14.

Table 1.14: Benefit cost ratio of dairy farmers

Sl. No	Benefit cost ratio class	No. of respondents							
		Category wise					Member wise		
		Category 1	Category 2	Category 3	Category 4	Total	Members	Non members	Total
1	0 – 1	9(16)	10(22)	9(32)	1(33)	29(22)	22(21)	7(23)	29(22)
2	1 – 2	42(74)	33(73)	19(68)	2(67)	96(72)	74(72)	22(73)	96(72)
3	2 – 3	6(10)	2(5)	0(0)	0(0)	8(6)	7(7)	1(4)	8(6)
4	Total	57	45	28	3	133	103	30	133

Source: Compiled from Primary Survey

From the Table, it could be observed that majority of the respondents irrespective of cattle population and memberships have benefit cost ratio ranging from one to two. Only six per cent of the respondents have benefit cost ratio ranging from two to three. This tilts to the fact that a major per cent of the respondents under survey has more benefits than costs. In order to know whether there is significant difference in the benefit cost ratio among the four categories of respondents, Analysis of variance (ANOVA) test has been done and the results of which are presented in Table 1.15

Table 1.15: Results of Analysis of variance of benefit cost ratio among four categories of respondents

Sl. No.	Categories	Mean ratio	F value	p value
1	Category 1	1.4105	3.758^{*}	.013
2	Category 2	1.2511		

Sl. No.	Categories	Mean ratio	F value	p value
3	Category 3	1.0857		
4	Category 4	1.1667		
5	Total	1.2827		

The results of ANOVA test indicate the fact that significant difference exists in the benefit cost ratio among four categories of respondents. In order to know whether in which categories, does this significant difference exists, post- hoc test has been done and the results pointed it out that significant difference exists between category one and three. Category one of those who have one to two cattle have more benefit cost ratio when compared to category three of those respondents who have six to ten cattle. In order to know whether there is significant difference between members and non- members in their benefit cost ratio, Independent samples t- test has been done and the results are presented in Table1.16.

Table 1.16: Results of Independent samples t-test of benefit cost ratio among members and non- members

Sl. No.	Membership	Mean ratio	t value	p value
1	Member	1.2913	$.409^{NS}$	.683
2	Non member	1.2533		

The results of Independent samples t-test reveal that there is no significant difference between members and non-members in their benefit cost ratio. This also highlights the fact that the impact of assistance and incentives received by the member dairy farmers has not reflected in their benefit cost ratio.

7. CONCLUSION

The study has analysed in detail the income and expenditure pattern of dairying. Along with that the contribution of net income from dairying to total income together with the benefit cost ratio have been found. Both member- wise and category-wise comparison have been made on the above mentioned identified variables. From the analysis, it was found that there is significant difference in the percent of feed cost to total cost for members and non- members in the first and second category. Since the members are receiving various assistance in the form of subsidies, the average percent of feed cost is found to be less for members when compared to the non- members. The labour cost is found to be more for members when compared to the non- members in the first two categories of respondents. It could also been seen that 100 percent of the farm respondents incur less than 20 percent of labour cost to total cost. This implies that labour cost is less for dairy farms because of its large scale rearing when compared to the other three categories of respondents. The percent of transportation cost is found to be more for category four when compared to the other three categories. As the farm units require bulk quantities of feed when compared to other categories of respondents, transportation cost will be incurred each day for collecting green grass, paddy straw etc and this makes them difference in cost when compared to other categories. In all the four categories, a major percent of the respondents earn more than seventy five percent of their income from the sale of milk. While analysing the contribution of net income from dairying to total income, there is no significant difference between members and non-members. The category wise comparison revealed that the average percent of the contribution of net income is found to be more for category two of those who have three to five cattle followed by category one of those who have one to two cattle. Economics of dairying has been worked out by finding out the benefit cost ratio for both category wise and member wise. While analysing the benefit cost ratio based on the cattle population, the mean ratio is found to be more for category one when compared to other three categories of respondents. Member wise analysis of benefit cost ratio made it clear that there is no significant difference between members and non- members in their benefits and costs. The members who have received assistance and incentives could not make an impact in their benefit cost ratio or the members could not make a significant increase over non- members. Though the assistance and incentives could make an impact in reducing the cost of members, it is not getting reflected in their benefit cost ratio. This points to the need of an increased amounts of subsidy rates that would enable the member dairy farmers to reduce their cost to the extent that they can make an impact in the benefit cost ratio when compared to the non- members.

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9. ABBREVIATION

MILMA : Kerala Co-operative Milk Marketing Federation
DDD : Dairy Development Department
AHD : Animal Husbandry Department
NDDB : National Dairy Development Board
PED : Productivity Enhancement Department
GOK : Government of Kerala
GOI : Government of India
FAO : Food and Agricultural Organisation
AI : Artificial Insemination
APCOS : Anand Pattern Co-operative Societies

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RESEARCH PAPER

FACETS OF FAMILY DECISION MAKING USING BINARY LOGISTIC APPROACH

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ABSTRACT

The family is regarded as a significant unit of analysis in the field of consumer decision-making. Studies on the role of different members in the family decision making are well documented in marketing. In this study, a binary logistic approach has been adopted along with different facets of loyalty to identify the influence of husband and wife in the purchase decision making process for a cross-section of product categories. The decision-making process within a family has become very difficult to predict due to the influence of different moderating variables and a thorough understanding of influence needs to be addressed. In an attempt to predict the decision-making the process, it is crucial to incorporate some important perceptual variables like involvement, brand trust, and different facets of brand loyalty. Different demographic variables have been found to influence the purchase decision-making behavior. It is evident from the study presented in this paper that the three types of loyalties affect the level of involvement of both husband and wife. It is interesting to recognize that wives play a dominant role than male counterparts while selecting kitchenware and furniture. For vacation choice, it is found that decisions are taken jointly. The binary logistic regression substantially could predict the group membership to a considerable extent.

KEYWORDS

Binary Logistic, Loyalty, Family, Decision-Making.

1. INTRODUCTION

One of the primary objectives of people in the field of marketing is to identify the person who primarily decides which brand would be purchased for consumption by the family members and also to know the relative influence of various members in the family to be it a nuclear family or an extended family. In fact, marketers try to understand how the decision about favoring a particular brand is formed and who exactly influence it. It is quite imperative to know the role played by different members of the family for varying product categories to formulate marketing and communication strategies. In this research paper, an endeavor is made to discern the role played by the husband, wives as well as their children in the decision making process. An attempt has been made to identify the relative influence of different members of the family in the purchase decision-making process including the children who exert dominant pressure on their parents to buy a particular brand for some product categories with which their level of involvement is very high. In the foregoing sections, the discussions would concentrate on the role of the husband, wife, and children. In this study, a serious attempt has been made to identify the relative influence of different members of the family in the purchase decision making process for diverse product categories. The role of the spouse in the decision making has been changed considerably over the years due to the growing level of education, the large number of working women in a family and the dominance of children in the decision making due to increasing awareness. In the twenty-first century, a sea change has been taken place due to revolutionary changes in the decision making roles by the family members so far as buying decision is concerned.

The behavior of a spouse, as a member of the family unit, has undergone second order change because of the information revolution, a shift in the family power, and education of the members in the family and also because of the occupation of wives. In this changing environment, the decision-making behavior within a family has become very complex and a thorough understanding of the influence of different family members needs to be addressed. In order to better understand the decision-making process, it is imperative to include some important perceptual variables like product involvement, brand trust, and brand loyalty have been considered in this study to describe the family decision-making process.

2. LITERATURE REVIEW

The role of different members in the family decision making has undergone revolutionary changes over the years as revealed by researchers conducting studies in the field of family purchase decision making. It is found that in literature in the field of family decision making vibrant shifts concerning the roles of family members have been dealt with extensively (Aribarg 2002, Arora és Allenby 1999, Seetharaman 1999, Su 2003, Ward 2006). The family decision making has been examined from different dimensions. It is found predominantly the researchers emphasized the influence of gender in the family buying behavior (Davis, 1970, 1971, 1976; Davis-Rigaux 1974, Filiatrault and Brent 1980, Spiro 1983, Cosenza 1985, Corfman 1991, Ward 2005). The extent and degree of assertion in the decision making process of female counterpart considerably depend on a number of factors such as the share of incomes of wives in the family (Blood and Wolfe, 1960), and the other psychographic characteristics of wives including values, attitudes, and opinions (Qualls, 1987). Early studies in the context of family purchase decision making mostly ignored the emotional involvement of different members rather focused on rational family decision-making issues. Nevertheless, this type of assumption ignores that people are not totally rational decision makers, but in many cases influenced by their emotions (Gelles and Straus, 1979). Close emotional bonds emerge over time among family members that influence the decision-making process and its output. Emotions (like love, sympathy, anger guilt) can influence different steps of purchase decision making.

The literature on husband-wife roles in family decision making is characterized by a great diversity of theoretical conceptualizations and empirical findings regarding their respective roles in different decision-making situations. It has been observed by prior researchers that the family decision-making process contains a number of stages and the role of involvement varies depending on the various steps involved in the purchase decision-making process. (Davis and Rigaux,1974; Hempel,1974; Starch and Staff,1958; Life,1965; Time,1967; Haley, Overholser and Associates,1975)**.** Again the influence of husband and wife vary across product and service categories (Davis, 1970; Davis&Ragaux, 1974; Ferberand and Lee, 1974; Life1965; Haley, Overholser and Associates, 1975) depending on the importance of the decision outcomes. It is further observed by researchers that for a particular type of product category wives generally play a dominant role where whereas for other types of product categories the major is played by the husband. Also, evidence from past studies revealed that in some cases both husband and wife are equally involved in the decision making process. Davis and Rigaux (1974) are generally credited for their pioneering work incorporating a degree of cohesiveness and unified direction to the study of family decision making. Davis (1970) in his paper has introduced the relative influence of husbands and wives in the purchasing decision of automobiles and furniture and reveal that men have more influence on automobile purchases, while women have more impact on decisions made for furniture, suggesting each category needs to be examined individually.

In a comprehensive study in the late 70s Cunningham and Green (1979), have observed and reported active involvement of the wives in a family choice making decisions when they are in a job. Rank (1982) concludes that as the level of education, income and occupational prestige experienced by the wife increase, the wife's input into the family decision-making process is also likely to

increase. According to Green and Cunningham (1975), working wives are more likely to take an active role in family decision making. They concluded that the influence of the husband had declined. Belch and Wills (2002, p118-9) has pointed out that wives' influence has significantly increased as compared to Belch et al. (1985)'s study. Shukla (1987) has shown that when the wife is employed in an occupational position equal to that of her husband's, she has more power within the family. The study was undertaken by Davis and Rigaux (1974) and Bonfield (1978) reveals a shift toward joint decisions in the final stage. Given that the final decision may be viewed as a culmination of the purchase process, it is possibly seen as the most important stage for accenting the individual role of each spouse (LaTour, Henthorne, and Ford 1991). As more and more women join the labor force necessarily empowered the women for taking a pivotal role in the family purchase decision making Studies illustrate that decisions are not made in isolation, rather they are the products of influence and confluence of social correlates (Srinivasan and Sharan, 2005). In most of the family buying decision making studies the roles of husbands and wives have been investigated (Belch and Willis, 2002; Sidin et al., 2004). Singh and Kaur (2004, pp. 38-9) observe that the effect of Indian working status of wives is not significant on family decision making. The purchase decisions are actually composed of a sequence of decisions and that the influencer at one stage of decision making may not be the same at another stage and the roles vary according to the product type (Ms. PinniVasantha Lakshmi, 2008). Much of the literature involves only the roles of husbands and wives in their study (Belch and Willis, 2002; Sidin et al., 2004) and the role of children often has been ignored (Lackman and Lanasa 2003). As a sequel to this, Johnson et al. (1994) scrutinized children's influence on decision making whereas other researchers concentrated mainly on the process (Hoffman 1977, Howard and Sheth 1969, Blackwell et al. 2006, Sheth 1974). The family decision making is indeed, a complex decision-making phenomenon since the children are also exerting pressure to shape the decision making. Kaur and Singh (2004) observe that children are individually active in initiating the idea to purchase a durable and in other stages of the decision-making process; they exhibit joint influence along with other members of the family. Hundal (2001) notes that brand selection decisions are made jointly by the couples which are significantly influenced by the children in the family. Various perspectives on brand loyalty have been studied by many researchers. Jacoby and Kyner (1973) view brand loyalty as a multidimensional construct involving attitudinal components and as a subset of repeat purchase behavior. Consumer involvement is a source to explain the differences in the degree of both mental and physical effort of a consumer and his decision making (Beharrell and Denison 1995; Laaksonen 1994). Demographic factors like family life cycle, age, income, occupation, and sex have considerable influence on consumer involvement. Further, within a product, there would be differences in the involvement levels across the family life stages (Jain and Sharma 2002). There are differences in the involvement levels for various products between men and women (Slama and Tashchian 1985; Jain and Sharma 2002). However, in the context of family decision making these issues have not been explored by researcher till now. The personality traits of both husband and wife might influence their active or passive participation in the different stages of buying behavior. In this study, we would try to incorporate some of the issues to identify the ones that are relevant in predicting behavior.

The relative influence of husband and wife has been extensively studied by different authors for a range of products (Belch *et al.,* 1985; Corfman and Lehman, 1987; Beatty and Talpade, 1994). However, this provides little insight into the nature of influence behavior. Some researchers (Lee and Collins, 2000; Levy and Lee, 2004) have focused on exploring influence behavior and the strategies adopted by family members, although there are limitations to this research and a gap exists in the literature concerning how husband and wife influence purchase decisions (Williams and Bums, 2000).

3. OBJECTIVES OF THE STUDY

Marketers should comprehend the significance of the family purchase decision-making process to segment, target, and position the brand in such a manner in order to target the advertising and sales promotion strategies with the objective of reaching and persuading the person making the purchase decision. So many studies have been conducted in the past to assess the relative importance of husband-wife purchase decision-making process across different countries in a different culture. So far knowledge goes, very few studies have been addressed by researchers to identify the role of different facets of loyalty as a few moderating variables which are very important to understand the relative influence of husband-wife decision making in a nuclear family. In our extensive review of the literature, we have not come across any study that incorporated these important perceptual variables which are supposed to explain a substantial proportion of behavioral typologies of family decision making. In this background, our intention is to explore the impact of these constructs in predicting the involvement of married couples for three product categories, viz, vacation choice, furniture & kitchenware. Keeping in view the study proposes to formulate the following research objectives.

- To classify the respondents into two distinct groups on the basis of the Logistic Regression Model
- To investigate the extent to which the product involvement and brand trust vary significantly among husband and wife for a cross-section of products
- To study the influence of the demographic variables in the context of family decision making
- To integrate the findings above and suggest possible managerial implications based on the findings of the study.

4. RESEARCH METHODOLOGY

A non-probability convenience sampling procedure was used because the researchers had no sampling frame and had employed snowball sampling as well since the objectives of the study is to relate different perceptual variables and no generalizations of the findings have been envisaged.

To avoid any sort of complication and response bias, it has been simply asked to give their response on a Likert Scale, starting with Husband mainly and ending with wife mainly. The questionnaire was applied after selecting the stimulus products to a sample of one hundred and twenty-five couples out of which two hundred questionnaires were found complete in all respect. The questionnaires were administered by separating the couples to avoid response bias. The stimulus products selected were the vacation choice, furniture, and kitchenware.

The methodology is chosen which is generally adopted in conducting descriptive research. The data for the study were gathered from Kolkata & Siliguri during the period 2017 to 2018.

Scale items were developed from reviewing prior literature and were further refined by conducting reliability and validity tests frequently applied in marketing and psychometric research conducted in this area. Factor analysis was conducted to establish the construct validity and the reliability measure using alpha was found to be quite satisfactory. The alpha values in most of the cases were more than 0.7 and the confirmatory factor analysis, though not reported here was found to be satisfactory.

5. FINDINGS, RESULTS & DISCUSSION

Table: 1.1

Classification Table Product: Furniture					
	Observed		Predicted		
			Gender		Percentage Correct
			.00 (Husband)	1.00 (Wife)	
Step 1	Gender	.00 (Husband)	23	11	34.8
		1.00 (wife)	11	21	31.8
	Overall Percentage				66.8

Note: The cut value is .500

Table: 1.2

Variables in the Equation							
		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1	Cognitive Loyalty	.165	.230	.517	1	.072	1.180
	Affective Loyalty	.208	.206	1.019	1	.013	.812
	Connative Loyalty	.042	.179	.055	1	.014	1.043
	Risk Importance	.272	.168	2.616	1	.106	.762
	Risk Probability	.011	.212	.003	1	.059	.989
	Involvement	.042	.240	.031	1	.006	1.043
	Brand Trust	.187	.108	3.003	1	.003	.829
	Working Status	.386	.597	.417	1	.019	1.470
	Family Size	.306	.571	.286	1	.593	.737
	Family Income	.864	.556	2.414	1	.020	.422

Note: (a)Variable(s) entered on step 1: Cognitive Loyalty, Affective Loyalty, Connative Loyalty, Risk Importance, Involvement, Brand Trust, Working Status, Family Size and Family Income
Note: (a) Omnibus Tests: Chi-square significant beyond p<0.000, Cox & Snell R Square: .410, Nagelkerke R Square: .586. (b) Hosmer and Lemeshow Test significant beyond p< 0.235.

It can be observed that for a durable product like furniture all the loyalty dimensions are found to be significant possibly because of the proliferation of branded furniture marketed by domestic as well as international players. As expected, gender significantly influence the involvement variable and past studies reveal that the purchase of furniture is predominantly influenced by the wives. However, no studies have incorporated this variable for linking with the level of involvement. The high-income families are found to be more involved with the decision making process because of the availability of branded furniture having differentiated, quality of material used and a variety of options available to the consumers. The increase in the number of branded products the decision may be categorized as n extensive problem-solving. In view of this, high-income families consider the purchase of furniture to be an important decision.

The theory posits that the vacation choice is normally categorized as a joint decision making a process where not only the husband and wife play a dominant role in

selecting a particular location for leisure travel; the decision is also influenced by their children. Though in our regression analysis we have not incorporated the impact of children in the decision-making process but it can be evident from other statistical tests that all the members of the family are highly involved with the choice of a destination for a leisure trip. All three categories of loyalties are found to be significantly influencing the involvement behavior of family in choosing a place for enjoying a vacation. In addition to this, it can also be observed that the size of the family, the income of the family as well as the working status of wives influence the involvement of husband and wife in choosing a leisure trip. It is quite interesting to observe that working wives do significantly play a dominant role in the decision-making process. Other than this, a different test would also be employed to examine the exact nature of decision making in the context of a family for vacation choice.

Table:1.3

Classification Table Product: Vacation Choice					
	Observed		Predicted		
			Gender		Percentage Correct
			0.0(Husband)	1.00(Wife)	
Step 1	Gender	0.0(Husband)	31	8	44.2
		1.00 (Wife)	9	22	31.4
	Overall Percentage				75.6

Table: 1.4

Variables in the Equation								
Variables	B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I.for EXP(B)	
							Lower	Upper
Cognitive Loyalty	.065	.219	.087	1	.068	.937	.610	1.441
Affective Loyalty	.108	.240	.204	1	.015	1.115	.696	1.784
Connative Loyalty	.433	.229	3.574	1	.059	1.541	.984	2.414
Risk Importance	.539	.213	6.402	1	.111	.583	.384	.886
Risk Probability	.543	.308	3.099	1	.078	.581	.318	1.063
Involvement	.184	.336	.299	1	.005	1.202	.622	2.324
Working Status	.301	.689	.192	1	.062	.740	.192	2.854
Family Income	1.019	.663	2.359	1	.001	.361	.098	1.325
Family Size	.432	.636	.462	1	.009	.649	.187	2.256

Note: (a) Omnibus Tests: Chi-square significant beyond p<0.004, Cox & Snell R Square: .309, Nagelkerke R Square: .414. (b) Hosmer and Lemeshow Test significant beyond p< 0.193.

Logistic regression was run to better understand the influence of different explanatory variables in categorizing the respondents based on their gender. The logistic regression model adequately demonstrates that gender can significantly be classified with more than 75% proper classification. The results of logistic regression revealed that affective loyalty is quite significant in case of a vacation choice though the magnitude of exponential beta reveal that conative loyalty is more dominant to categorize the respondents into two different groups. The magnitude of chi-square reveals that the overall goodness of fit of the model is significant beyond p<0.004 and the Hosmer Lemeshow test is also in-significant which actually establish the fit of the model. Hence the role of gender can never be underestimated in the context of decision making for the choice of vacation.

Traditional research on kitchenware reveals that basically, it is a joint decision making where both husband and wife are involved with the decision making process. It is evident from the table 1.6 presented below; the three types of loyalties affect the level of involvement of both husband and wife. It is not surprising to discern that wives play a dominant role than the male counterparts while selecting kitchenware. It is also evident that the size of the family is not significantly related to the level of involvement for this category of the product, though the household incomes obviously influence the involvement behavior significantly.

Table: 1.5

Classification Table Product: Kitchen ware					
	Observed		Predicted		
			Gender		Percentage Correct
			0.0 (Husband)	1.00(Wife)	
Step 1	Gender	0.00(Husband)	25	7	78.1
		1.00(Wife)	7	25	78.1
	Overall Percentage				78.1

Table: 1.6

Variables in the Equation									
Variables		B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I.for EXP(B)	
								Lower	Upper
Step 1	Cognitive Loyalty	.426	.391	1.191	1	.075	1.532	.712	3.294
	Affective Loyalty	1.023	.388	6.968	1	.008	2.783	1.302	5.949
	Connative Loyalty	.294	.338	.758	1	.384	.745	.384	1.445
	Risk Importance	.098	.236	.173	1	.077	1.103	.694	1.754
	Risk Probability	.336	.279	1.447	1	.229	1.399	.809	2.420
	Involvement	1.593	.477	11.142	1	.001	.203	.080	.518
	Brand Trust	.212	.176	1.459	1	.027	.809	.573	1.141
	Working Status	1.661	.977	2.890	1	.089	.190	.028	1.289
	Family Income	.345	.898	.148	1	.001	.708	.122	4.115
	Family Size	.775	.685	1.277	1	.107	.461	.120	1.766

Note: (a) Variable(s) entered on step 1: Cognitive Loyalty, Affective Loyalty, Connative Loyalty, Risk Importance, Risk Probability, Family Income, Family Size, Involvement, Brand Trust, and Working Status.
Note: (a) Omnibus Tests: Chi-square significant beyond p<0.000, Cox & Snell R Square: .447, Nagelkerke R Square: .597. (b) Hosmer and Lemeshow Test significant beyond p< 0.231.

As discussed above, a binary logistic regression has been run to distinguish the responses into two categories based on the same set of explanatory variables unveil that it is quite possible to categorize the respondents into two groups. The affective loyalty, risk importance involvement, brand trust, and family income are the most important variables for categorizing into two groups. The model fit is established by the Hosmer and Lemeshow Test and the Nagelkerke R Square are found to be acceptable for establishing the relationships. It has been observed that more than 78 percent of the respondents can be classified correctly using the binary logistic regression.

Past research findings have shown that kitchen wares are mostly dominated by wives in the context of family decision making. The findings reported in table 1.6 corroborate that gender, working status significantly influence the involvement behavior of respondents considered in this study. Surprisingly, behavioral loyalty is not found to be significant which may be due to the nature of the product. Kitchen appliances are not purchased frequently and the style, design, features change over the period. In view of this, it may be inferred that the tendency to behave in a particular way can never be expected for this type of product. The results amply demonstrate that in this type of decision making both rational as well as emotional factors influence the level of involvement with the product. The results of binary logistic for kitchenware are found to be significant considering the chi-square value and the values of pseudo-r-square. So far as the coefficients are concerned the cognitive loyalty, brand trust, and working status is found to be important facets in discriminating the gender variable. The values of the exponential beta of the working status of wives reveal that it is one of the most important variables for classifying properly the two groups. Cognitive loyalty and brand trust are also found to be significant though the magnitude of exponential beta is not on the higher side. The plausible reason may be due to the lower values of the overall goodness of fit measured by various pseudo-r-squares.

The Cox and Snell R square as well as Nagalkarke R square values are quite significant and the likelihood ratio is also significant as is evident from the values of Chi-Square. The classification table reveals that in 76.3 percent cases the Logistic regression model could predict correctly the purchase dominance displayed by the respondents.

6. CONCLUSION

The results of the research work suggest that for a few selected products the wives are more influential than the husband. For purchasing a product like kitchenware and furniture wives exhibit more influence. In case of vacation choice, family members take the decision together. Spousal influences are observed across different product categories based on their involvement with the product which in turn establishes the brand trust. Various demographic factors play a significant role while shaping the purchase decision. In this current study, it is revealed that the working status of the wives plays a very important role while taking a purchase decision. The other demographic factors, viz. family income, family size have also been examined. The findings reported in the study corroborate that gender, working status significantly influence the involvement behavior of respondents considered in this study. Surprisingly, behavioral loyalty is not found to be significant which may be due to the nature of the product. Kitchen appliances are not purchased frequently and the style, design, features change over the period. In view of this, it may be inferred that the tendency to behave in a particular way can never be expected for this type of product. The results amply demonstrate that in this type of decision making both rational as well as emotional factors influence the level of involvement with the product. An attempt has been made to classify respondents into two groups based on the gender of the respondents along with few important explanatory variables namely working status, cognitive loyalty, affective loyalty, conative loyalty, risk probability, risk importance, involvement, brand trust, and family size. The results of binary logistic regression demonstrate that these explanatory variables may be considered to classify respondents into two groups. The logistic regression model could classify accurately nearly 78% of the sample members with a small margin of error. The pseudo-R square values, chi-square values are found to be significant. Research in consumer behavior, especially, in spousal purchase decision-making pattern provides an extensive portfolio of research agenda for scholars in this field. Family and family consumer behavior are, no doubt, complex and "messy" areas compared to individual decision making. Research in the future should also attempt to integrate the course of research on families into a meaningful whole so that research thereafter can strive toward integration into a theory of family consumer behavior. For marketers, husband-wife roles in the decision-making process could serve as a basis for market segmentation.

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Annexure: 1

Demographic Profile of the Respondents

Categories	Frequency	Percentage		Categories	Frequency	Percentage
Age of the Respondents (Years)				**Gender of the Respondents**		
Up to 25	11	6		Husband	100	50
26-30	13	7		Wife	100	50
31-35	59	29		**Total**	**200**	**100.00**
36-40	63	31		**Working Status of the Respondents**		
41-45	42	21		Husband Mainly	71	**35**

46 & Above	12	6		Both Working	129	65
Total	**200**	**100.00**		**Total**	**200**	**100.00**
Education of the Respondents				**Respondents Monthly Family Income**		
10^{th} Std	-----	-----		Up to 20000	25	12
12^{th} Std	13	7		20001-40000	50	25
Graduate	129	65		40001-60000	68	35
Post Graduate	58	28		60001-80000	31	15
Professionally Qualified	-----	-----		80001& Above	26	13
Total	200	100.00		**Total**	**200**	**100.00**
Family size of the Respondents				**Family Structure of the Respondents**		
Up to 3	131	65		Nuclear Family	**167**	83
4-5	40	20		Joint	33	17
6 &Above	29	15		**Total**	**200**	**100.00**
Total	**200**	**100.00**		**A total of 200 hundred Samples were used for this study.**		

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RESEARCH PAPER

THE IMPACT OF REAL ESTATE REGULATION AND DEVELOPMENT ACT ON FINANCIAL PERFORMANCE OF REAL ESTATE SECTOR: PRE AND POST ANALYSIS

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ABSTRACT

India's real estate sector has always grown at a rapid pace. The real estate sector has also been one of the main employers in the country and a major contributor to the country economic growth. However, the sector has been recently revamped with the introduction of the Real Estate Regulation and Development Act. This paper reviews the overall performance of listed real estate companies in India and analyses the change in its performance before and after the implementation of the Act. The performance has been analysed on the basis of four variables i.e. Net Sales, Total Income, Net Profit and Earnings per share. The findings revealed that there is no significant difference in the overall performance in the pre-RERA and post-RERA period, and only the level of total income was found to be statistically significant in both the periods.

KEYWORDS

Real Estate, Real Estate Regulatory Authority, Financial Performance.

1. INTRODUCTION

The Indian economy has expanded radically over the last decade with the country developing at a very rapid pace. Concurrently, the Indian real estate sector has also been developing and the sector has become one among the fastest growing sectors with worldwide recognition. The real estate sector generally comprises of the housing sector, retail sector, hospitality sector, and commercial sector. The growth of this sector depends largely on the level of corporate environment, the demand for office space and the preference towards rural and urban accommodations. This sector also incurs huge NRI investments. The real estate sector in India has always played a crucial role in the country's growth and economic development. Further, the ever-increasing migration and the increased demand for urban infrastructure has increased its significance. It is expected that the real estate industry in the country will attain a market holding of US$ 1 trillion by 2030 from US$ 0.12 trillion in 2017. The sector is also said to contribute to 13 percent of India's GDP by 2025. The central government along with respective state governments have undertaken various schemes to promote the development of this sector. The initiatives include, the Pradhan Mantri Awas Yojana (PMAY), which sanctioned over 6.85 million houses and National Urban Housing Fund with disbursement of US$ 9.27 billion. The government's aim of 'Housing for all by 2022' is impelling the development of residential activity. Alongside, the retail sector, hospitality sector and the commercial real estate sector are expanding tremendously as it allocates the imperative infrastructure which is essential for the country's development. The Securities and Exchange Board of India (SEBI) also gave its consent for setting up of the Real Estate Investment Trust (REIT). The trust is said to aid investors in investing in the real estate sector thereby foster the growth of the sector. The trust is also said to widen the scope of the sector and bring in opportunities with a value of over US$ 19.65 billion to the Indian real estate industry over the coming years (IBEF).

However, until 2016, this sector had remained largely unregulated. The Consumer Protection Act, Competition Act and the Contract law were among the few legislations, for regulation, but, these are only general legislations. There were also state laws that regulated the real estate sector. However, they failed to bring accountability and transparency in transactions with domestic consumers. Due to this unstructured system and rampant practices, the real estate sector had become the focal point for all the fraudulent and deceptive practices. This led to the need for establishing a supervisory body to oversee the operations of the sector. Thus, in the year 2013, the Government of India proposed a special legislation for the real estate sector and finally in the year 2016, the Real Estate Regulation and Development Act was implemented.

The implementation of RERA is said to revamp the real estate sector and this has motivated researchers to probe into its impact on the real estate sector. The present study seeks to analyse the real impact of RERA on real estate companies. The study also investigates the impact of RERA on financial performance and on the earnings of the shareholders.

2. REVIEW OF LITERATURE

The Real Estate Regulation and Development Act, 2016 is an Act of Parliament and has been implemented with an aim to bring efficiency, accountability and transparency in real estate transactions. The Act serves to protect the interest of consumers or home buyers and also serves as an arbitrator or settlement authority for timely and faster settlement of disputes. The bill was ratified by Rajya Sabha on 10th March 2016 and thereafter by Lok Sabha on 15th March 2016. Subsequently, the Act was implemented on 1st May 2016 and 59 of the 92 sections were enforced. Rest of the rules were implemented on 1st May 2017. The Act was set up mainly with the objectives of establishing a regulatory authority for the real estate in each State and Union Territory and to implement an arbitrary authority for easy settlement of disputes. Adjudicating Officers were also required to determine the compensation payable by the promoters (Ramani, 2017).

The Real Estate Regulatory Act is established with various new provisions (Sharma & Gupta). One of the major provisions under the bill include the proposal to set up individual real estate regulatory authority and arbitrating officers for every state and union territory. All developers are required to compulsorily register under the real estate regulatory authority of the concerned state. The mediators who intermediate the sale of plots, apartment or buildings are also required to register under the Act. The penalty for non-registration by promoters may be either a fine of 10 percent of the total cost of project or imprisonment of up to three years and in certain cases the promoter may have to comply with both these penalties (Prabhu, 2017). The mediators are also required to maintain account books and other related evidence and certificates. The act also requires the constructors to set apart not less than 70 percent of the sale progresses in a distinct bond account. This ensures that money raised from allotters is not averted by the developers. The developers are also restricted from changing the plans and blueprints without receiving the approval of at least two-thirds of members. The act further requires the adjudicating authorities to settle their cases and pass judgement within 60 days of complaints (Sharma & Gupta). The Act also makes it necessary for developers to be accountable even for the post sales issues (Livemint, 2019)

Real Estate Regulatory has increased the lucidity and accountability in the Real estate industry, and this is likely to improve the overall image of the Indian Real Estate sector (TNIE). The introduction of the Act may also lead to an increase in the flow of FDI to the real estate sector, which was formerly falling as a result of the previous ambiguous regulation system (Kumar, Chawla, & Mohanty, 2016) .The corruption between agents and builders and most of the other possible ways of corruption

is said to have lowered to a great extent under the Act. (Kadam, Jangam, Pawar, Sagavekar, Parulekar, & Patil, 2018). A sample study (Kumar, Chawla, & Mohanty, 2016) with concerned parties revealed that out of 442 respondents, about 83% are of the belief that the RERA Act will become beneficial in the long run. Studies (Ali, 2016) have also revealed that there is scope for certain amendments that may consider the interest of stakeholders other than the allottees. However, certain studies have concluded that this Act will become beneficial only for the high budget real estate dealers and middle- class people. Studies also say that this Act will lead to a price rise in the real estate sector due to lesser competition and participation of only high budget dealers (Kadam, Jangam, Pawar, Sagavekar, Parulekar, & Patil, 2018).

At present there are some reports of failed projects, unsold housing units and investors fleeing the market. The remedial measures for this situation include providing an exemption to gains made from home sales, and providing relief to realty developers (IndiaToday). There have also been some issues such as difficulty in tracking project promoters that are not registered and therefore penalty cannot be initiated without giving the project proponent an opportunity of being heard (The Economic Times, 2019). The recent downfall in the real estate sector has been a cause of many factors. A study on the Indian scenario of the global recession has revealed that the recession has caused a problem of low liquidity situation which has made it hard for developers to raise finance. The study has also revealed that the real estate sector has made losses due to the downfall of the global economy. However, the home buyers might benefit as recession might have lowered the price (Erpate, 2014). Studies have also suggested that RERA will be one of the most successful initiatives to cleanse and standardize the real estate sector if implemented successfully (Iyer & Rajput, 2017). According to the 'Indian Real Estate and Construction: Consolidation for Growth Report' the real estate sector may add 13 percentage to India's GDP by 2025 (KPMG).

A report relating to housing sales had revealed that sales in major south Indian cities have increased by 20 percent when compared to 18 percent in northern cities and 15 percent in the west in the year 2018. The report also revealed that this has been the general trend in the southern cities mainly due to their organised and professional approach in the real estate sector not only in the Post–RERA period, but also in the Pre-RERA period (The Economic Times, 2019). Studies also reveal that there has been a general increase of 8 percent in housing sales in the first three quarters of 2018 as compared to the same period in 2017 (IndiaInfoline, 2018). A study analysing the impact of RERA on profitability of Indian real estate developers, using a sample size of 10 companies and using paired t-test revealed that RERA has impacted the profitability of real estate developers significantly in the short term and have led to a negative impact on the profit margin of real estate dealers (Thakur, 2018).

However, the success of the Act depends on its proper implementation. Along with the proper, full-fledged implementation, it is also important to ensure the removal of any difficulties relating to the adherence of the Act. For this purpose the government has constituted a special committee, headed by the Joint Secretary of Union housing and urban affairs, to suggest recommendations to strengthen this law (2018). The government is also conducting a number of workshops to ensure the effective implementation of this Act. The committee is also expected to advise the state governments relating to the implementation of RERA. Even though the Act may take some time for its full-fledged implementation (Shrivastava), it is believed that the new legislation has revamped and refined the regulatory provisions in the real estate sector. There is also high public confidence that the Act will accomplish its objectives.

3. METHODOLOGY

The study has used secondary data which has been collected from Ace Analyser database. The sample universe comprised of all the listed companies in the Real Estate sector for a period covering four years, ranging from 2014 to 2018. Of these, companies with insufficient information were eliminated as shown in Table 1. Data was analysed using Wilcoxon Test and Friedman test through the SPSS Software.

Table 1: Sample Formation

Sample Selection	Number
Total number of listed companies in Real Estate Sector	252
Less: Companies with insufficient information	68
The final number of companies	184

4. ANALYSIS AND INTERPRETATION

The analysis of the data examined the relevant summary statistics using measures like mean, median and standard deviation in the pre-RERA and post-RERA period. Further analysis was conducted using the Wilcoxon test during the pre-RERA and post-RERA and implementation. A further in-depth analysis was carried out using Friedman Test to know the differences in performance prior to, during and post implementation.

Table 2 reports the descriptive statistics of Indian real estate companies during the period of study. The results

reveal that the mean and median sale during the pre-RERA period is 2206.5 and 143.59 respectively and during the post-RERA period is 2466.18 and 138.81. The mean and median of Total Income and Net Profit has fallen in the post-RERA period as compared to pre-RERA period. The findings in Table 2 further reveal that the mean and the median of EPS have also fallen in the post-RERA period as compared to pre-RERA period.

Table 2: Descriptive Statistics

VARIABLE	PRE-RERA PERIOD			POST-RERA PERIOD		
	Mean	Median	SD	Mean	Median	SD
Net Sales	2206.55	143.59	6611.64	2466.18	138.81	7940.266
Total Income	720.15	22.71	2498.66	635.42	17.74	2082.73
Net Profit (After Taxes)	234.49	5.43	1127.01	107.70	5.11	1394.32
Earnings per share	13.23	.4750	80.68	5.83	.3900	25.74

Table 3 reports the results of the Wilcoxon test which demonstrates the difference in the performance of sales, total income, net profit and EPS in the pre-RERA and post-RERA period.

4.1 NET SALES

It indicates the total value of revenue earned by a company after subtracting the sales returns and other discounts that are offered to the purchaser from total sales. It is a representative of a corporate's size as the size factor always has an impact on the overall buying and selling power. This study analysis if the total value of sales has changed in the post-RERA period as compared to pre-RERA period. The findings of Table 3 reveals that there are168 values with a negative difference, 177 values with a positive difference and 23 values having no difference in their sales in the pre-RERA and post-RERA period. The P. value at 5% level of significance reveals that there is no much difference in the net sales between the pre-RERA and post-RERA period.

4.2 TOTAL INCOME

The total income refers to the amount generated from operations which includes net sales, other income and the extraordinary income of the company. Table 3 shows that there are 159 instances of a positive difference, 205 instances of a negative difference and only 4 instances with no difference in the total income during the pre-RERA and post-RERA period. The p.value at 5% level is statistically significant and it reveals that the total income in the pre-RERA period is different when compared to the post-RERA period. Total income or operating income is an indication of the company's managerial efficiency. A reduction in total income can mean the company was not managed well, which led to the company being negatively affected by the Act.

4.3 NET PROFIT

Net Profit indicates the total sum earned by the concern after considering the taxes. It indicates the competency of a company in transforming its revenue into profits. The net profit after tax is beneficial to determine the actual yield or gain earned by the business concern. Table 3 reveals that there is no much difference between the Net profit in the pre-RERA and post-RERA period. These findings indicate that the company's net profits were not really affected by RERA.

4.4 EARNINGS PER SHARE (EPS)

EPS is calculated by dividing the net income with the total number of shares outstanding. It is evident from Table 3 that the EPS in the pre-RERA and post-RERA period is insignificant, which means that there is no much variability in the EPS, in the pre-RERA and post-RERA period. This indicates that the earnings of the shareholders were not really affected by RERA.

Table 3: Wilcoxon Test

Variable	Rank				Significance level
	Negative	Positive	Ties	Total	
Net Sales	168	177	23	368	.091
Total Income	159	205	4	368	.004
Net Profit (After Taxes)	168	198	2	368	.129
Earnings per share	181	178	9	368	.509

Table 4 demonstrates the results of Freidman Test in which the sample was divided into three groups in accordance with the year prior to implementation, the year during which it was implemented and after full-fledged

implementation. This is done because only certain section of RERA was introduced on May 1st, 2016. The full-fledged implementation came on 1st May 2017. Group 1 consists of companies' data in 2016, which is prior to the implementation of the Act. Group 2 consists of data relating to 2017, where RERA has been introduced, however only certain sections of RERA was implemented and group 3 consists of data relating to 2018 which is after the full-fledged implementation of the Act. This classification is done to examine whether the change in performance is statistically significant among the three groups. It is clear from Table 4 that the performance measured by Net Sales, Total Income, Net Profit and EPS is statistically insignificant which means that there has not been much difference in the performance of real estate companies during all the three phases.

Table 4: Friedman Test

VARIABLE	GROUP-1			GROUP-2			GROUP-3			Chi-Square	Sig
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD		
Net Sales	2337.97	169.36	7180.75	2379.43	165.80	7364.89	2552.93	128.29	8496.07	.980	.613
Total Income	734.31	25.91	2484.37	655.67	22.36	2112.61	615.16	14.44	2057.99	1.28	.526
Net Profit (After Taxes)	260.05	6.42	1302.59	165.48	6.04	1063.64	49.93	4.52	1661.58	2.26	.322
Earnings per share	14.72	.49	97.13	5.72	.39	21.24	5.94	.38	29.63	3.56	.168

5. CONCLUSION

The real estate sector in India has always played a vital role in the country's economic development. However, this sector which was largely unregulated has been recently bought under the ambit of Real Estate Regulation and Development Act, which is established as a supervisory authority for the real estate sector. The study has analysed the change in performance of 184 listed real estate companies before and after implementation of the Act.

A comparison of various performance indicators during the pre and post RERA periods has exhibited the non-existence of a significant difference in the net sales in between both the periods. However, the level of total income between the two periods was found to be statistically significant which means it was different in both the periods. The findings further reveal that there is no much difference between the Net profit in the pre-RERA and post-RERA period. The EPS was also found to be insignificant indicating that the shareholders were not really affected by RERA. A comparison of the sample during three phases i.e., in accordance with the year prior to implementation, the year during which it was implemented and after full-fledged implementation was made and the results revealed that the performance in all the three periods are statistically insignificant, which means there is no much difference in the performance of these companies between all the three phases.

A weakness of this study is the exclusion of some variables that may be indicators of performance before and after the Act, which are not included in the study. There is also scope for further research on the impact of RERA on the stock market, potential buyers and the economy.

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RESEARCH PAPER

THE RELATIONSHIP BETWEEN INVENTORY MANAGEMENT AND FIRMS` PERFORMANCE

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ABSTRACT

The current study aims to examine the impact of inventory management on profitability of Indian pharmaceutical companies. The analysis is based on 82 pharmaceutical companies, for ten years from 2008 to 2017. Least square regression model is used for analysing the data. One accounting-based measure is used as a proxy for firms' profitability. Leverage, firms' size and age are used as control variables. Findings reveal that number of days holding period has a negative and significant association with firms' performance measured ROA. Further, Firms size and age positively and significantly impact firms' profitability. This study is going to contribute to the existing literature by examining the relationship between inventory management and the profitability of Indian pharmaceutical companies which are neglected by researchers.

KEYWORDS

Inventory Management, Firms` Performance, Pharmaceutical Industry, India.

1. INTRODUCTION

Business activities such as marketing, production, and paying for bought supplies are dramatically influenced by the way inventory is managed (Crum, Klingman, & Tavis, 1983). To illustrate, the cycle of business is interlinked with the inventory level as it incurs costs related to inventory, part of which are costs related to making orders (including also the costs required for transporting stocks to the market place), costs for carrying (e.g., retaining stock or goods for some time.) and costs associated with the condition when stocks are sold out, as reordering and transporting goods to the market also consume funds. The performance of working capital is affected by the adopted inventory management approach (Yang, Ronald, & Chu, 2005). Having too much inventory supplies safeguards against shortages, although they lead to great carrying costs. Firms' competency in fulfilling the market needs depends highly on the way it manages inventories and how fast it can get supplies at all stages of business activity. Therefore, it is imperative to have easily responsive channels for providing supplies in a way capable of keeping up with the market pace (Bowersox, Closs, & Stank, 2003).There should not be much working capital invested in inventories. Inventory management is discussed when inventories are held. Holding inventory involves costs such as maintaining storage and handling it. This condition makes us pose the question why inventories are held.Stare & Miller (1862) listed three motives for holding inventories transaction motive, precautionary motive and speculative motive. When firms minimize their inventory that leads to a reduction in the cost of storage and insurance, which in turn, result in increased profitability. Empirical studies found a positive association between inventory management and return on assets (Imeokparia, 2013; Lwiki, Ojera, Mugenda, & Wachira, 2013). Moridipour & Mousavi (2014) argue that there is an inverse relationship between inventory turnover and gross profit. Low level of inventory is associated with good and improved financial performance (Roumiantsev & Netessine, 2014).

2. LITERATURE REVIEW

Inventory represents a substantial portion of working capital management, which significantly affects firms' profitability. In normal situations, firms do not hold a high level of inventory as they are required to produce the demanded quantities. However, due to the shortage, companies are forced to maintain inventory to avoid any bad probabilities (Mathuva, 2013). Though there is an extensive literature related to inventory, still it is debatable whether the high or low level of inventory has a positive association with firms' profitability. Empirical studies (e.g. Imeokparia, 2013; Lwiki et al. 2013; Roumiantsev & Netessine, 2014; Wambua, Okibo, Au, & Ondieki, 2015; Mukopi & Iravo, 2015) proved that there was a positive correlation between inventory management and firm's profitability. Lwiki et al. (2013) conducted a research based on primary and secondary data from 2000 to 2007 for evaluating to what extent lean inventory system, strategic supplier partnership, and technology were being applied at 8 Kenyan selected companies. Descriptive statistics and correlation matrix were used for data analysis. Findings showed that inventory management has a positive relationship with return on sales and return on equity. It was concluded that performance of sugar firms was a function of the inventory management practices. In the same year, Imeokparia (2013) investigated the association between inventory management system and firm's performance of food and beverage companies in Nigeria by analyzing data from 1982 to 2011, using correlation test and simple multiple regression. The results exposed a significant correlation between the performance of food and beverages companies and inventory management; it was also found that there were three qualities which were very important for inventory management decision makers in manufacturing organizations from the perspective of the logistics provider: on-time delivery, customer satisfaction, and order fulfillment. Consistently, Wambua et al. (2015) attempted to measure the impact of inventory system on the firm's performance of Seventh Day Adventist Institutions. Data were collected via a questionnaire filled up by 64 employees. The outcomes showed a positive significant correlation between firm's performance and inventory system; inventory management of warehousing had a significant impact on the financial performance. Likewise, Roumiantsev & Netessine (2014) used inventory levels, sales and lead times as proxy variables for analyzing the impact of inventory and supply chain management on firm's performance measured by return on assets (ROA). Data of 722 American manufacturing companies were extracted from the quarterly reports for a period from 1992 to 2002. Using descriptive statistics, correlation, and regression for analyzing the data, it was revealed that the levels of inventory were associated with better performance.

Furthermore, Mukopi & Iravo (2015) explained the impact of inventory management on the performance of 100 USA companies. A survey was designed and formulated for collecting data; the response rate was 87%. The data were analyzed using SPSS software. The outcomes of the ANOVA statistical test demonstrated a highly significant correlation between the variable of inventory and financial performance.

3. RESEARCH METHODOLOGY

This study relies on secondary data that are extracted from ProwessIQ database and companies annual reports. Financial data covers ten years from 2008 to 2017. The study uses accounting-based measure return on assets as a proxy for firms' profitability.

The target population of the study consist of 141 companies which are listed on Bombay Stock Exchange. To ensure that the sample is ideal, the study set the following criteria. Firstly, the company must have established before 200. Secondly, data must be available for the period from March 2008 to March 2017. Finally,

the company must not have any extreme outliers

Therefore, one company was excluded because of its establishment after the financial year 2008, 41 companies did not have data for the study period from March, 2008 to March 2017 was dropped from the sample in order to maintain balanced, structured panel and 17 companies were eliminated from the sample due to the existing of extreme outliers that would affect the results obtained from the regression model. Thus, the final sample consists of 82 companies that met the above criterion.

To examine the impact of board composition on firms' profitability, two regression models are designed as follows:

$$(ROA)_{it=} \alpha + \beta_1 (NHP)_{it} + \beta_2 (SIZ)_{it} + \beta_3 (LEV)_{it} + \beta_4 (AGE)_{it} + \varepsilon_{it}$$

Where,

- (ROA) = Stands for the financial performance of company I, at time t, measured by return on assets
- (NHP) is Number of days holding period
- (LEV) Is leverage
- (SIZ) Is size of firms measured by log of total assets?
- (AGE) Is the age of firms
- α) = Common y-intercept.
- (β1-β4) = coefficients of the explanatory variables
- $(\varepsilon)_{it}$ = Stochastic error term of company i at time

4. DATA ANALYSIS

4.1 DESCRIPTIVE STATISTICS

Table 1: Descriptive statistics

Variable Name	Mean	Median	Maximum	Minimum	Std. Dev.
ROA	6.10	5.90	92.64	-50.90	9.15
NIHP	32.24	27.58	205.00	1.00	25.44
SIZ	8.26	8.20	12.87	3.68	1.86
LEV	1.94	0.45	104.60	0.00	9.36
AGE	33.28	28.00	110.00	1	18.82

Table 1 presents descriptive statistics of study variables. The mean values of profitability measures ROA is 6.10 and a standard deviation of 9.15, respectively. The mean and median of inventory holding period are 32.24 and 27.58, respectively; these indicate that pharmaceutical companies take almost one month to turnover their inventory. This result consistent with Afrifa (2013) who found that firms take approximately one month to sell out their inventory. The minimum and maximum days that are needed by the companies to turn over the inventory range between 1 and 205 which is closer to the result found by Afrifa (2013) minimum and maximum days ranges between 0 and 254.2. Regarding controlling variables, the mean values of leverage, firms' size and age are 1.93607, 8.25990, and 33.82 respectively

4.2 CORRELATION MATRIX

Table 2 represents the coefficient correlation matrix for all variables. It is clear from table (2) that number of days holding period has a negative and significant association with firms profitability measured by return on assets. Similarly, leverage has a negative and significant association with firms' profitability. On the contrary firms, size and age have a positive and significant relationship with firms profitability measured by return on assets. Correlation matrix also indicates the absence and presence of multicollinearity. If an independent variable in a model has tolerance coefficients value below 0.10, it means that the model is suffering from multicollinearity (Field, 2009). Table 3 represents the multicollinearity test and coefficient correlation matrix for all variables. Results of multicollinearity tests show that there is no high collinearity among the variables, which indicate the absence of multicollinearity. Looking at the values of VIF, we do not see any value more than ten which suggests that there is no multicollinearity. According to statisticians, if VIF for any variable is more than 10, we have multicollinearity, which is not the case in this study, all VIF values are less than 2.

Table 2: Correlation matrix

		ROA	NIHP	SIZ	LEV	AGE
ROA	Pearson Correlation	1				
NIHP	Pearson Correlation	-.046	1			
SIZ	Pearson Correlation	.116**	.063	1		
LEV	Pearson Correlation	-.107**	.330**	-.139**	1	
AGE	Pearson Correlation	.129**	.221**	.292**	-.065	1
VIF			1.204	1.204	1.204	1.204

4.3 REGRESSION MODEL

Findings in table (3) illustrate that fixed effect regression model which is used for finding out the impact of number of days of inventory holding period on the financial performance of pharmaceutical companies listed on BSE is fit, R2 is 0.47 and adjusted R2 is 0.41 which mean that number of days inventory holding period, leverage, firms size and age explain 0.47 of the changes in return on assets. The coefficient of number of days inventory holding period is (-0.092), it means number of days inventory holding period has a negative impact on return on assets of pharmaceutical companies listed on BSE, this impact is significant at 1% level. The negative and significant impact could be attributed to the following reasons: first, a considerable amount of fund is locked up in inventory which can be invested in other projects which are highly profitable which would enhance the performance of the companies. Second, it is due to various costs of holding inventory.

Table 3: Regression model

Fixed Effect Regression Model			
	Coefficient	**t-Statistic**	**PV**
NIHP	-0.092	-5.891	0.000
Size	-0.265	-0.306	0.760
LEV	-0.467	-3.017	0.003
Age	-0.201	-1.575	0.116
C	18.967	3.804	0.000
R-squared	0.474		
Adjusted R-squared	0.413		
F-statistic	7.791		
Prob(F-statistic)	0.000		

5. CONCLUSION

The study aimed to evaluate the relationship between inventory management and profitability of Indian pharmaceutical companies, using a panel data set of 82 companies listed on Bombay Stock Exchange for ten years. Empirical evidence was drawn with the help of SPSS software program. Least square regression model is used for analyzing the data. One accounting-based measure is used as a proxy for firms' profitability. Leverage, firms' size and age are used as control variables. The empirical results revealed that inventory management negatively and significantly correlates with firms profitability measured by ROA. Further, Firms size and age positively and significantly impact firms' profitability

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RESEARCH PAPER

AGE AND WORK ENGAGEMENT

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ABSTRACT

This paper examines the impact of age differences on the work engagement level of the academicians in higher education institutions. The impact is examined through an empirical study involving 129 academic staff members from three universities (University of Kashmir, Central University of Kashmir and Islamic university of science and technology) of Kashmir region, using the independent samples test. The results reveal that the work engagement level of old academicians is significantly better than that of the young academicians in the sample institutions.

KEYWORDS

Work Engagement, Age, Academic Staff.

1. INTRODUCTION

The Organisational performance of service organisations like higher education institutions depends primarily upon the performance of their individual employees. In higher education institutions, the performance of academic staff determines the quality of academic services offered by the institution and is the pivot around which all the educational activities, such as curriculum, evaluation, etc., rotate. Therefore, to have an energetic, dedicated and focussed academic staff becomes extremely crucial for a higher educational institution to be effective and productive.

Work engagement leads to improved employee productivity because engaged employees are energized and passionate about the work they do and with passion comes excitement, enthusiasm and productivity (Kroth and Boverie, 2003). Engaged employees are willing and able to contribute to the success of the company and are, therefore, real assets to an organization (Rama Devi, 2009). Higher education institutions therefore, need to strive to enhance work engagement of their academic staff because engagement leads to better employee performance and overall organisational productivity.

Owing to its importance, the concept of Work engagement is now being extensively researched. However, very few research studies have empirically examined the impact of individual characteristics such as age of the employees on their level of Work engagement. Researchers tend to adopt a blanket approach to the evaluation of the Work engagement levels of old and young employees and thereby ignore the influence of age differences on the said concept. The present study focuses on age of employees as individual-level variable which is made salient in organizational settings and thus produces distinct experiences for different age groups in the organizations. This study, therefore, is an attempt to fill the gap in this field and provide a new perspective to the findings of previous studies on the subject of Work engagement.

2. LITERATURE REVIEW

Schaufeli et al. (2002) define employee work engagement as a positive fulfilling, work related state of mind that is characterized by vigor, dedication and absorption. They further state that engagement is not a momentary and specific state, but is a more persistent and pervasive affective – cognitive state that is not focused on any particular object, event, individual, or behaviour. Harter, Schmidt and Hayes (2002) define employee work engagement as the individual's involvement and satisfaction with as well as enthusiasm for work. Hewitt (2004) defines employee work engagement as the employees desire to speak positively about the organization, desire to be a member of the organization and tendency to go beyond the expected for the organization. Wellins and Concelman (2005) suggest that Work engagement is the illusive force that motivates employees to higher levels of performance. This coveted energy is an amalgam of commitment, loyalty, productivity an ownership. They further added that it includes feelings and attitudes employees have towards their jobs and their organization. Robinson, Perryman and Hayday (2004), define engagement as a positive attitude held by the employee towards the organization and its values. An engaged employee is aware of the business context, works with colleagues to improve performance within the job for the benefit of the organization. They further add that organization must develop and nurture engagement which is a two way relationship between employer and employee.

Employee work engagement refers to the amount of discretionary effort exhibited by employee in their jobs (Frank, Finnegan & Taylor 2004). Macey and Schneider (2008) looked at engagement attitudinally and behaviourally. They distinguished three broad conceptualizations of employee work engagement, namely state, trait, and behavioural engagement. Sarkar (2011) opined that employee work engagement is a barometer that determines the association of a person with the organization.

Common to all these definitions is the idea that employee work engagement is a desirable state, having an organizational purpose. It connotes involvement, commitment, passion, dedication and enthusiasm at work.

3. AGE & WORK ENGAGEMENT

Age of the employees is also considered as an important paradigm of employee engagement. James et al. (2011) explored employee engagement in five groups of employees categorised on the basis of age. The study examined differences in employee engagement among groups as: emerging adults (less than 24 yrs), settling-in adults (25-39), prime-working years (40-54), approaching retirement (55-65), and retirement eligible (66 and older). They found that employee engagement keeps on increasing with age of the employee. Overall, the retirement eligible group reported the highest average engagement while the emerging adults reported the lowest average engagement. Swaminathan and Ananth (2009) concluded that no correlation exists between age of the employees and employee engagement. On the same note Wilson (2009) also opined that there is no significant difference in engagement level among employees of different ages. Younger workers are more future orientated and look for knowledge acquisition because this can further their careers. On the other hand, older workers (who have already acquired knowledge and experience in their years of working) are more present orientated and are more selective with their resources. Older workers also have some preconceived notions that they are not supposed to be working or are just simply waiting until they retire, and as such might be less engaged (James et al., 2011).

Based on this discussion, we propose our study hypothesis:

Hypothesis: Age influences the level of employee Work engagement.

4. RESEARCH DESIGN & METHODOLOGY

4.1 THE SAMPLE

The sample of the study consisted of the respondents from three universities of Kashmir province i.e. University of Kashmir, Central University of Kashmir and Islamic university of science and technology. The elements included professors, associate professors and assistant professors of the aforementioned universities. The selection of sample was governed by the principles of judgemental sampling.

For the present research, two groups of respondents were surveyed, older and younger employees. The selection of the ages for distinguishing younger and older employees was based on the suggestions of various studies. For example, Avery, McKay & Wilson (2007) suggested that employees begin to perceive themselves as "old" over 55 years. In addition, Ashbaugh & Fay (1987) reviewed more than 100 studies in this area and founded that the mean age when referring to older workers was 53.4 years. Finally, Kooij et al. (2008) defined old employees as working people who are between 50 and 55 years old and above. Hence, when operationalizing age, younger employees were considered under the age of 49 and older employees over the age of 50 years old and above.

A total of 150 questionnaires were administered to the potential respondents chosen from 3 sample Universities (50 questionnaires in each University), out of which 129 usable responses were received, for a final response rate of 86 percent.

4.2 DATA COLLECTION TOOL

Employee work engagement in this research is measured using the *Utrecht Work Engagement Scale (UWES)* developed by Schaufeli *et al*. (2002). This measure is a three-factor scale consisting of seventeen items aiming to measure the three constituting aspects of work engagement i.e. vigor, dedication and absorption. All seventeen items are scored on a six-point Likert scale ranging from 1 (never) to 6 (always).

4.3 RELIABILITY

Cronbach's alpha (α) values were used to test the reliability of all the constructs so as to obtain a dependable picture of internal consistency of the measuring instrument. The results of reliability test, given in Table 1**,** reveal that for all the constructs, alpha (α) values are above the threshold level of 0.7, indicating a good internal consistency.

Table 1: Cronbach's Alpha values

Construct	Alpha (α)
1. Vigor	0.74
2. Dedication	0.78
3. Absorption	0.83
4. Work Engagement	0.81

5. RESULTS & DISCUSSIONS

Respondent Demographic Profile

Table 2 shows the distribution of respondent age groups. Out of the total 129 respondents, 69 were old (53.49%) and 60 were young (46.51%).

Table 2: Demographic profile of the respondents

Age Group	Frequency	Percent
Young	69	53.49
Old	60	46.51

Age and Work Engagement

Descriptive and group wise mean scores are presented in Table 3. Mean scores of the older academic members of the sample universities for the three dimensions of Work engagement as well as for overall Work engagement is slightly higher than the reported mean scores of respondent younger academic members. It, therefore, can be said that older academic members/respondents have a higher level of Work engagement than their younger counterparts.

Table 3: Descriptive Statistics of Work Engagement (N=129)

Construct	Age	Mean	Std. Deviation
VIGOR	YOUNG	4.25	.255
	OLD	4.31	.244
DEDICATION	YOUNG	4.10	.268
	OLD	4.14	.274
ABSORPTION	YOUNG	4.17	.280
	OLD	4.25	.269
WORK ENGAGEMENT	YOUNG	4.17	.281
	OLD	4.23	.289

Further, Independent sample test was utilized to ascertain whether the difference in the mean scores of the respondent old and young employees of the sample universities with respect to Work engagement is statistically significant or merely an outcome of a random variation. The results indicate that the perceptual differences of employees are statistically significant when the differences are evaluated on the basis of age as the *p*

value is less than .05 (Table 4), indicating that the old employees are more engaged in their work as compared to the young employees of the sample universities.

Table 4: Independent Samples Test (Age)

	Levene's Test for Equality of Variances		*t-test for Equality of Means*			
Construct	***F***	***Sig.***	***t***	***Df***	***Sig. (2-tailed)***	***Mean Difference***
VIGOR	.550	.459	-1.132	121	.259	-.04242
DEDICATION	1.162	.282	-1.867	121	.063	-.07064
ABSORPTION	1.631	.203	-1.143	121	.254	-.04541
WORK ENGAGEMENT	.016	.901	-1.998	121	***.047****	-.05282

**p<.05*

6. CONCLUSION AND IMPLICATIONS

In view of the findings obtained in the present study, which has been detailed above, it is quite safe to conclude that the academic staff of the three sample universities under study has reported a fair level of engagement with respect to their work.Further, on basis of the results obtained in the present study through independent samples test, it is quite safe to conclude old academic members have reported higher engagement with their respective work as compared to the young faculty members and the differences in level of Work engagement between the two age groups is statistically significant. Therefore hypothesis: - *Age influences the level of employee Work engagement* can be safely accepted.

The implication of the research for the HR practitioners is that in order to develop and engage employees, a much more flexible approach is to be adopted. An approach that takes into account the age differences that exist among the employees and is flexible enough to satisfy the needs and priorities of different groups of employees. The findings have significant bearing for both organizations and for employees also. On one hand organizations would be able to develop loyalty and longevity among employees and on other hand employees' needs and aspirations could be catered in better way.

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RESEARCH PAPER

QUESTIONING MODERN BUSINESS MANAGEMENT PRACTICES AS ENFRAMING: A CALL FOR HEIDEGGERIAN PERSPECTIVE

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ABSTRACT

This paper attempts to Heidegger`s relevance in examining the current business management practices with reference to Enframing. Enframing is a concept given by Heidegger, which refers to a specific revealing, under which it considers the Real as a standing reserve. Hence, it plans for the effective utilization of this reserve.

On the other hand, Management is a process of effective utilization of resources- whether men or material. In this sense, there is an obvious analogy between Modern management discipline and Enframing. Now, Heidegger criticizes Enframing as to revealing only a narrow aspect of the originary revealing. In this respect, we can also analyze various tools and techniques of decision making as the limiting factor of human decision making in general.

This paper attempts to propose Heidegger`s relevance in examining the current business management practices with reference to Enframing. Enframing is a concept given by Heidegger, which refers to a specific revealing, under which it considers the Real as a standing reserve. Hence, it plans for the effective utilization of this reserve. On the other hand, Management is a process of effective utilization of resources- whether men or material. In this sense, there is an obvious analogy between Modern management discipline and Enframing. Now, Heidegger criticizes Enframing as to revealing only a narrow aspect of the originary revealing. In this respect, we can also analyze various tools and techniques of decision making as the limiting factor of human decision making in general.

KEYWORDS

Management, Enframing, EMH, Behavior Finance, Principles of Management, Philosophy of Management.

1. INTRODUCTION

This paper attempts to examine the theories and basic premises of Business Management with reference to Enframing. Enframing is a concept given by Heidegger (1977), which refers to a specific revealing, under which it considers the Real as a standing reserve. Hence, it plans for the effective utilization of this reserve. On the other hand, Management is a process of effective utilization of resources- whether men or material, to enable the executives to determine the best investment or project. Both Enframing and Managerial decision making are ordering in nature and go through the process of planning, organizing, commanding, coordinating, and controlling (POCCC), as suggested by Henri Fayol.

My argument is that these theories are based on the oversimplification of human nature as a rational animal. This assumption is derived from Aristotle's notion of the human as *zoon logon echon* (in Greek), and its Latin translate as *rationale animale*. For Heidegger, Human is neither rational nor animal. Instead, Irrationality is the true essence of the human.

Thus, this paper brings out a crisp critique of the tenets of modern-day management and also suggests a possible way to overcome the limitations.

2. MODERN PRINCIPLES AND PRACTICES IN MANAGEMENT: BASED ON THE RATIONALITY PRINCIPLE

Management is considered as the art and science of administering an organization. Such an organization can be of any kind depending on its ownership. It may be entirely a government organization or a private organization or semi-organization. The discipline of management has been developed through years of efforts of thinkers, more specifically, since the Industrial revolution. Those days, the organizations' prime concern was to ensure efficiency and productivity. Among the thinkers were mostly engineers like F.W. Taylor, who propagated scientific management. He focussed on the work measurement, that is, the role of managers was to determine the best way of doing the manufacturing process, by doing a precise measurement of each step involved in the assembly line. It was supposed that there is only one best way of doing things. This role of the manager was limited to shop level activities.

However, another Engineer Henri Fayol brought out general principles of management. In this, he suggested four functions of management, namely, POCCC, as mentioned previously, along with fourteen principles of management- "division of work, authority, discipline, unity of command, unity of direction, subordination of individual interest, remuneration, scalar chain, order, equity, stability of tenure of personnel, initiative, and spirit de corps" ("Henri Fayol", 2019, para. 1). These functions and principles were intended to ensure greater efficiency at an organizational level. Attributing to his works, he is regarded as the founder of modern management methods.

In general, Management involves many activities that help the administrative heads in formulating a strategy for meeting the organization's long-term goals. These goals are supposed to be achieved while enabling the employees to work in coordination and making the optimum utilization of the resources- (I suggest) 4Ms as 'Man, Money, Material and Media,' which are Human, Financial, Production, and Information systems respectively.

Such a conception of a manager is based on the notion '*homo economicus*, or economic man.' This notion is based on the general understanding of human being as a rational being. It presupposed that Human being does every act of utilizing resources rationally to achieve the optimum out. It is interesting to note that even human being itself has been considered as a depleting resource, which must be harnessed suitably. Thus, in the business activities, the man, as *homo economicus*, can be understood of two kinds. First, as the consumer, he wants the maximum utility in any business deal. Secondly, as the producer, the man wants the maximum profit out of this. Thus, any business transaction can be taken as the trade-off between the consumer and producer for the sake of optimum behavior respectively. Thus, on the part of managers, the skill is to determine the perfect deal, which could benefit both the stakeholders. The satisfied consumer becomes loyal to the organization, which lead to further profit, and hence, sustenance and growth to it. Hence, managers are essentially decision makers.

The above principles are based on the notion of the human as perfectly rational entities, and on that basis, decision making modelled are devised to implement this notion, while aiming at the most efficient decision. However, in practice, such models do not manifest the desired outcomes. The underlying reason is the inherent irrationality of human beings and the groups they form together. This led to behaviorist school of thought in management, which drew largely from the discipline of psychology. It looks into the cognitive basis of the business decisions. Herbert Simon was one of those great thinkers Simon provided an alternative theory of bounded rationality. In this connotation, Winograd and Flores (1986) mention Herbert Simon's concept of 'bounded rationality', as, "Making a decision is a heuristic search among alternatives in a problem space of possible course of action, with the aim of achieving a preferred set of consequences. It is the process of bounded rationality in which choices are made by applying formal rules to partial information in ways that are precise but not based on a simple model of deduction and proof. Such processes have been taken by researchers in artificial intelligence as the basis for a wide variety of human mental activity" (Winograd, T., & Flores, F., 1986, 145).

Behavior finance is one off-shoot of Behaviorism in management, which rules out the possibility of perfect

rationality in financial decision making. Such decisions are usually made while measuring risk and uncertainty, and determining the best investment decision alternative. The invest decisions could be in the project related to setting up a new manufacturing unit, expansion plans, or setting up an entirely new venture. All the decisions become part of the organization's broader strategic plans. This may also involve the buying or selling the securities in the stock market. This negates the theory of Efficient Market Hypothesis (EMH) and suggests that an investor may not necessarily make an investment decision just for the sake of earning maximum profit. Despite the fact the CAPM (Capital Assent Pricing Model) and MPT (Modern Portfolio Theory) are meant to optimize the risk-profile of a portfolio (a set of securities with varying risk characteristics), it is unlikely to predict the market behavior. There could be vested interests or biases playing a critical role. Thus, behavior finance takes into account the typical human behaviors like – emotions, feelings, attitudes, prejudices, stereotypes, among others. While describing the Heideggerian intervention in the modern finance studies, Fytros (2018) suggests that we need to relook into the current financial decision making from a different perspective, which is broader in sense, and encapsulates earlier theories of human's investment behaviour.

Today, modern management practices are heavily driven by ever-growing technological development. Technology as a tool has not only facilitated humans in recording and extracting information, but also, has made the decisions extremely complex activity. This complexity, however, is being worked through, more sophisticated decision making tools and techniques. Artificial intelligence has revolutionized the information system management, which aids the managers in devising a suitable strategy.

3. CONCEPT OF ENFRAMING, AND HEIDEGGERIAN CRITICISM OF CURRENT MANAGEMENT PRACTICES

In his key text, *The Question Concerning Technology,* the detailed exposition on the characteristic features of Enframing has been provided to make it adequately understood. We have already stated Enframing as a special kind of revealing, in which it is challenging revealing; it challenges the man to consider the real as a standing reserve. It is also an ordering revealing. Wherever this ordering holds sway, i.e., control, it eliminates every other possibility of revealing. And, revealing remains restricted to what ordering instructs. For Heidegger, revealing or unconcealment is what the truth in its originary sense.

Now, Heidegger (1977) criticizes Enframing as to revealing only a narrow aspect of the originary revealing, which could lead to turning. In this respect, we can also analyze the various tools and techniques of decision making as the limiting factor of human decision making in general. My argument is that these theories are based on the oversimplification of human nature as a rational animal. This assumption is derived from Aristotle's notion of the human as *zoon logon echon* (in Greek), and its Latin translate as *rationale animale*. For Heidegger, Human is neither rational nor animal. Instead, Irrationality is the true essence of a human.

Now, Limitations of current management practices can be found in the underlying assumption of the entities that are usual parts of the day-to-day activities of managers. These relate to the things involved. These things may be the raw materials as well as the finished products. Apart from these, the very conception of work that has been commonly understood ever since the days of the industrial revolution can be under question. For Heidegger, work is like work of art, is in essence, setting up of the truth. Truth, in itself, is strife.

In addition to the concept of 'work,' another significant conception is 'thinking.' For Heidegger (1966), thinking which is commonly understood is a kind of calculating. Hence, such ordinary thinking is a kind of symbol manipulation, and hence, representative. This thinking is called as calculative thinking, and, put at par with another type of thinking, namely, meditative thinking. Meditative thinking is always an ordinary thinking. It always becomes the origin of something, which is not yet on the horizon of consciousness. This thinking is an inception thinking, which regenerates the degenerative thinking. The calculative thinking is the evidence of Enframing, a revealing that is challenging. In Enframing, man's thinking turns into calculative. Man becomes a measuring person. Thus, rather than becoming a part of the creation, man can only do replication of what is already there. The entire manufacturing and production process is essentially an act of Enframing.

While criticizing the current practices in management, Paul Griseri (2014) states, "An abiding temptation with many management disciplines (as indeed in other fields) is to focus not on the reality they study, but on the representation of the object of study, in the form of models, theories, concepts and so on. The abstraction becomes a placeholder for the reality, but in so doing can take over centre stage. A phenomenon is then understood solely in relation to a concept: it may become a confirmation or a disconfirmation, an extreme example or a typical one, or it may fall into a sub-category, or be the paradigmatic example – but always it is an example, confirmation or otherwise *of* some model or theory, which thus becomes the means by which we engage with that reality. The concept becomes the mode of presentation, which in turn becomes the definiens of the phenomenon" (Paul Griseri, 2014, p.1). It is evident that in search of an optimum strategy, using model building has become the foundational pursuits of today's managers. This behavior has been fueled by the latest advancement in statistics based technology, namely- data science. With deep learning algorithms, it is assumed that human behavior has been approximately captured. The entire human effort in

the business management discipline is exhausted towards collecting and designing the database based on empirical observation, and with the search engines. With the availability of global level data, called as – Big Data analytics, the researches in business management practices is claimed to have achieved a new height.

Nevertheless, it cannot be ruled out that, emotions and feelings too are being calculated with the aim to compute the desired result, which could come out of the complexity of the behavior of humans and their groups. However, this effort is again nothing but a rationalization of not-yet rationalized data. In this sense, the management endeavor is another facet of rational thinking, which is under the influence of Enframing (which considers human as a standing reserve, which is to be optimally utilized using proper planning and measuring).

Paul Griseri (2016) mentions about Miriam Green's paper: "theory in management becomes subject to the expectation that it resembles empirical natural science – even though much successful management research is based on other philosophical foundations. Green's conclusion is that management theory, as much as other parts of modern human existence, has become subject to the 'commodification of everything" (Griseri, P., 2016, p. 1).

Betta et al. (2014) attempted to understand the global financial crisis of year 2008 from a Heideggerian perspective. For them, it should be considered as a historical event culminated as a result of business practices, incorporating people decisions and economic evaluations influenced by subjugation to the powerful players in the market. This characterized by mass surrender to the overarching rules, which undermined the individual yet meaningful differences. Thus, the market investment was an example of Enframing, which later resulted in surmounting of the essence, defying the existing rules and procedures.

4. THE WAY OUT- MANAGEMENT AS ART & MANAGER AS AN ARTISAN

As we have discussed previously that Enframing leads to the emergence of human nature as measuring. This is not an inherent nature but is the influence of revealing that forces the ordering attitude of a man. This ordering man seeks for the business activity as the set of well-tested principles or axioms. This act is the result of inherent anxiety that seeks the certainty in the outcomes. Heidegger suggests that Enframing is a danger. The danger is the occurrence of turning in human behavior, and also of the organization made up of humans. This turning (kehre) comes all of a sudden, that dismantle the existing set up developed with the predetermined set of principles.

Eleanor Helms & John Dobson (2016) in their essay, 'Heidegger's Critique of Technology and the Contemporary Return to Artisan Business Activity' wrote- "So far aesthetics has played a limited role in our understanding of business activity, focused mainly on evaluating product quality and the character qualities (virtues) of the firm that produced them We draw on Heidegger's fuller account of aesthetic value to show how a firm—like a work of art – can disclose the way human projects and technologies are already at work in a given context. In this way, we show that firms play an essential role in human self understanding— a role that Heidegger assigns primarily to works of art" (Helms E. & Dobson, J., 2016, p. 204).

Helms & Dobson (2016) further state that "The broad philosophical foundations of the being of the manager-as artisan are already laid in the work of Martin Heidegger; in particular his later writings such as The Question Concerning Technology and The Thing" (Helms E. & Dobson, J., 2016, p. 206). They admit the fact the Heidegger and many other philosophers, including those of business ethics, haven't written directly on the business management theories and practices. Nevertheless, "on the question of the ontology of the artisan, Heidegger is uniquely valuable. He provides an interpretation that differs fundamentally from those based on either ethics of virtue, or a beauty-based aesthetic" (Helms E. & Dobson, J., 2016, p. 206). They argue the entire business organization and the principles running it should be based on the understanding of what is a human being. Indeed, there is a sharp difference on this aspect between Heidegger and those who follow Aristotelian notion of human being as rational animale.

Helms & Dobson (2016) suggest that most of the buzz words of today's business worlds, such as- role of Technology, ensuring mass-production to minimize average production cost, and balancing the market forces are driven by the humans' anxiety to attain efficiency. This anxiety leads the focus on calculations in every business activity. This overemphasis of calculation is the result of ignoring the true essence of humanism, and this is a trait of modernity as dehumanizing. Consequently, this is the manifestation of Enframing. They further insist that only through the work of art, the negative shades of Enframing can be undermined. By ensuring the creativeness or innovation in the business activity, though apparently dismantle the rigid structure of Enframing, may actually make the organization becoming closer to the authentic essence. The art is not just an ordinary technological production, but also, brings forth the inherent capacity (of organization, and the humans within) to demonstrate the holistic nature of their essence.

5. CONCLUSION

Enframing characterizes the ordering behavior of human being. Ordering is ordinarily understood as a device to achieve a certain outcome by modeling the organization or human behavior based on historical data. This is intended to optimize the organizational resources, namely, financial, material, human, and others. This conception is based on the commonly recognized conception of a human being as rational animal. At the same time, it considers the concept of the 'thing' as a fixed entity. Whereas, for

Heidegger, Man is not mere a rational being. Instead, man is a language being, which means man has the capability to language. This language is not the language is the ordinary sense, that of, a system of significations. Rather, the language has a much broader role to play, and that is of the ontological-existential. Now, Enframing causes the broader role of language as existential to merely that of information. Language as information, leads to fixedness of things, in the ordinary sense. Whereas, for Heidegger (1977), the phrase 'thing things' actually describes the emergence of thing as a continuum of absence-presence-absence. In this manner, thing becomes thing as itself as a whole, and not being produced as combination of its components. This peculiar nature of a thing in its originary nature prevents it as a calculable entity.

In the same way, human nature cannot be formalized or predicted to perfect accuracy. However, by employing the organizational processes as a facilitator of the creative process, what Heidegger called as Poiesis (Poiesis is a Greek word, which refers to 'to bring forth'). This poiesis, in contrast to machination, paves the way to authentic progress for the business organization.

This paper is based on the implication of the concept of 'Enframing', as discussed above, is a part of my PhD thesis on Heidegger's views on Language and technology. Enframing signifies the cornerstone of conception of human being as a measuring being. The capacity of measure any entity in the world, empowers him do calculation of anything at his disposal. But, at the same time, this ability to calculate is also found to be the limiting factor, as it restricts the man from becoming conscious of the revealed truth, which could be possible only if we overcome the clutches of Enframing.

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RESEARCH PAPER

A STUDY ON THE DETERMINANTS OF THE CAPITAL STRUCTURE OF BANKING AND TELECOMMUNICATION INDUSTRY

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ABSTRACT

Although there have been many prior studies of the determinants of capital structure, the question of what determines the best financing mix that maximizes a firm's value is still the most debatable issue in corporate finance. Besides, a great deal of previous studies focused mainly on developed countries' non-financial firms paying little attention to developing countries and financial sector. Therefore, this study attempted to fill the gap by analyzing the capital structure for Telecom and Banking sector of India. This paper approached the issues of capital structure by evidencing Indian firms to uncover the firm level determinant factors of capital structure. To discover what determines capital structure, three firm level variables (Return on Assets, Tangibility, Liquidity) were selected and correlated against the appropriate capital structure measure (Debt to Equity Ratio). Samples of eight companies of both were taken and secondary data were collected. Consequently, correlation analysis was made based on financial statement data of the selected companies over the study period of 2017 - 18. The major findings of the study indicated that Return on Assets is the significant firm level determinants of capital structure in Telecom industry and Tangibility in case of banking industry of India.

KEYWORDS

Determinants, Debt Equity, Tangibility, Liquidity, Return On Assets.

1. INTRODUCTION

Organizations have been battling with capital structures for over four decades. During credit extensions, organizations have been unfit to fabricate enough liquidity to endure the withdrawals, particularly those ventures with capricious income streams which end up with overabundance obligation amid business stoppages. (CFOs) always experience these inquiries while dealing with their accounting reports: initially, is it prudent to restore the abundance money to investors or contribute it, and also, would it be a good idea for them to back their new activities by including obligation or raising capital from value? Accomplishing the correct capital structure by characterizing the synthesis of obligation and value for an association to fund its activities and ventures has tested scholastics and experts alike. A few organizations center on the customary tax reduction of obligation, since premium is frequently an assessment deductible cost, while numerous different organizations hold generous measures of money and investigate choices of how to manage it. The decision of capital structure for firms is overall the most crucial issue of the budgetary system of a business element. Strategies by which open organizations money their benefits set up their possession structure and reflect benchmarks of their corporate administration.

The capital structure most appropriate for an association is a much discussed inquiry. While a few contentions express that Capital structure isn't noteworthy in esteeming an organization's securities or the danger of putting resources into them, others remark that capital structures have been progressively influencing both esteem and hazard. The ideal capital structure develops diligently, and fruitful corporate pioneers should continually consider factors, for example, the organization and its administration, the economy, government guideline and social patterns, the condition of capital markets, and industry elements.

Any choice to increment or diminish influence relies upon economic situations and financial specialists' acknowledgment of obligation. The period between the late-1970s and the mid-1980s favored obligation financing. Hence, without precedent for a long time, in the late '80s, value showcase esteems transcended the substitution expenses of book estimation of benefits, for example, plants and hardware. It was a sign to deleverage. Access to capital markets isn't as troublesome as it used to be over 10 years prior. Organizations are not relying upon banks, which presently claim not exactly 33% of the credits they begin.

Quarter one of 2009 saw numerous organizations exploiting low loan fees to raise assets in the worldwide security showcase. The monetary situation is by all accounts where it was in mid-1975, when fiscal reports began appearing of progress and associations with solid capital

Structures began gaining different organizations. While a few organizations are bringing their accounts up in the open markets, some are utilizing security continues to satisfy transient bank obligation, fortifying their monetary records and restoring bank liquidity.

The research question which needs to be investigated is: What determines the capital structure in Indian companies? In essence this is a test of the applicability of some of the findings in earlier studies in other countries.

The sub objectives for the research question are to:

- Identification of factors considered by companies before making financing decisions.
- Study the effect of capital structure on the profitability of the organization.
- See how capital structure reflects the future plans of the organization.

2. LITERATURE REVIEW

Pornpen Thippayana (2014) tells about the basic issues for firms in choice of financing, particularly the long haul financing in which prompts association's future speculation opportunity. Decision of long haul financing blend utilized by the firm are called capital structure, making financing from obligation, value and half and half securities that a firm uses to create its advantages, tasks and future development. Capital structure choices along these lines are a standout amongst the most essential issues in money related administration in which can add to amplify the company's esteem. In like manner, capital structure choices influence the expense of capital and capital planning choices. In the papers of Modigliani and Miller (1958) demonstrated that capital structure or strategy for financing is immaterial to the estimation of firm under the ideal market suppositions while Modigliani and Miller (1963) contended that capital structure is applicable with firm an incentive under tax collection condition. Resulting scientists have loosened up suspicions, for example, liquidation cost, non-obligation charge shield, office cost, lopsided data, and have brought capital market gratings into the model. Apparently, the primary elements influencing capital structure choices are identified with these contacts.

Anshu Handoo & Kapil Sharma (2014) in their investigation they distinguishes the most imperative determinants of capital structure of 870 recorded Indian firms containing both private part organizations and government organizations for the period 2001– 2010. Ten autonomous factors and three ward factors have been tried utilizing relapse investigation. It has been reasoned that elements, for example, productivity, development, resource substantial quality, estimate, cost of obligation, charge rate, and obligation serving limit have noteworthy effect on the influence structure picked by firms in the Indian setting.

Hafiz Waqas Kamran, Muhammad Usman Khan & Shahbaz Sharif (2014) in their examination investigates the primer determinants of capital structure of banking firms of Pakistan. The discoveries find real determinants

from the point of view of past hypotheses of capital structure are size of the firm, gainfulness regarding return on resources and profit for value after expenses and Gross Domestic Product GDP over some stretch of time. The capital decision choice for the financial firms in Pakistan is symmetric to the pecking request hypothesis clarifying the way that there is negative and significant relationship among influence and profit for value after charges. The noteworthy contrast over the financial firms and some monetary constraint are the variables which are affecting the choice of obligation to-value blend. We have utilized Pannel Data models like least square sham variable model LSDVM, Fixed impact mode, arbitrary impact demonstrate and pooled relapse mode. Through factual tests our outcomes are supportive of irregular impact relapse results. Besides results are very useful for the chiefs while characterizing the ideal dimension of obligation to value blend particularly in the financial segment. Watchwords: Leverage, GDP, measure, pecking request, capital structure.

Ahmad Danu Presto (2015) in their exploration article "Determinants of capital structure investigation: experimental investigation of media transmission industry in Indonesia 2008-2015" expressed that the capital structure is a basic component in the company's long haul money related key choice. For the most part, the company's administration will in general make influence with the ideal capital structure as the objective. The ideal capital structure reflects relative number of obligation and value to augment the arrival on speculation and association's an incentive close by limits the expense of capital that legitimately shields the firm from any potential dangers, for example, liquidation and budgetary trouble. Numerous investigations have been found the contemporary capital structure hypothesis which causes the organizations to comprehend financing conduct with the capital structure determinants. In any case, these speculations additionally proposed distinctive theories/presumptions with respect to the capital structure. The aftereffect of those examinations does not prompt simultaneousness for the particular factors that influence the capital structure with the goal that the speculations can't consummately clarify the perfect financing choices. The outcome demonstrates 68.5% variety of the reliant factors (influence/TDR) of capital structure all in all can be clarified by the factors in the model, for example, gainfulness, measure, substance, liquidity, chance, the successful expense rate, proprietorship, loan cost and GDP, while the staying 31.5% is affected by different factors outside the framework. The last venture proposes the hugest elements that influence the capital structure, for example, estimate substance, liquidity, chance, loan fee, GDP and possession which reliable with some capital structure speculations. It is proposed for chiefs in the media transmission industry in Indonesia to consider those components while rebuilding their capitals or others money related choice. Be that as it may, the ideal capital structure variable obviously does not influence the association's an incentive in industry level. The outcome shows that firm esteem autonomous of the capital structure because of conduct elements of the speculators in Indonesia who will in general overlook the central factor(s) of the firm.

Gabriel-Radu Petre in his research article “The Impact of Capital Structure on Telecom Companies Value Europe vs. United States of America” states that Optimal financing structure of organizations is the subject of various present day considers which examine the degree in which capital structure may influence the organization's esteem. The established hypothesis of Modigliani and Miller, that there is no ideal financing structure, speaks to the premise of the advanced fund that has prompted an exhaustive research with respect to capital structure speculations. Speculations have broken down the effect of capital structure on organization esteem and how to boost esteem. The point of this examination is to break down on the effect of capital structure upon firm esteem and to clarify the impact of the principle determinants of capital structure looking at results for the telecom business crosswise over US and Europe. I have picked this subject because of the significance that it has been given, being regularly tended to in the money related writing. In the previous 60 years, noteworthy advancement has been made on the capacity of the fundamental hypotheses to clarify choices with respect to the financing structure and to give experimental help to the use of these models in the business condition. Different examinations have broken down budgetary choices made by the recorded organizations both in rising nations and created economies. Besides, I have picked the broadcast communications segment because of serious improvement in this field and development openings produced by the advancement of remote advances which permit growing client base because of the likelihood of giving administration in territories which appeared to be unavailable previously. I chose to consider impacts of the capital structure firm estimation of organizations in the US and Europe, to catch zone particularities and the connection with the market estimation of organizations.

Aysegul Guner (2016) in his examination directs a near trial of exchange off hypothesis and pecking request hypothesis. The examination likewise attempts to abuse the contrasts between the capital structure choices for different degrees of free buoy rate and remote paid in capital, and for those that have different market esteems. As indicated by the observational outcomes, in spite of the fact that pecking request hypothesis appears to all the more likely depict the capital structure of the organizations, a portion of the determinants are appropriate for exchange off hypothesis. The aftereffects of the examination additionally uncover that organizations that have a free buoy rate somewhere in the range of %50 and %75 have lower degrees of influence and the level of influence changes for various market estimations of organizations.

Maziar Ghasemi & Nazrul Hisyam Ab Razak (2016) in

their examination researches the impact of liquidity on the capital structure among the 300 recorded organizations in the Main market of Bursa Malaysia from 2005 to 2013 financial years. Pooled OLS is connected to examine the effect of liquidity proportions on various Debt proportions. Liquidity of an organization, which is the autonomous variable of this investigation, is estimated by two regular proportions which are: brisk proportion and current proportion. Moreover, the Debt/Equity and Debt/Asset proportions speak to the capital structures dependent on the present moment, long haul and all out obligation. The outcomes demonstrate that every one of the proportions of liquidity impacts affect every one of the intermediaries of influence. As indicated by the outcomes, Quick proportion positively affects influence; albeit, Current proportion is adversely identified with influence. In addition, transient obligation is more affected by liquidity contrasted with long haul obligation.

Sasho Arsov & Aleksandar Naumoski (2016) in their investigation they portrayed that the objective of this paper is to look at if there are any determinants that efficiently impact the capital structure of the organizations in the Balkan nations and to decide whether any of the current capital structure speculations are important for their situation. We apply a board relapse on an example comprising of the biggest and most oftentimes exchanged business entities from four nations. The outcomes demonstrate that the bigger organizations and those with higher fixed resource ventures show higher influence, while the more gainful organizations and those with progressively unmistakable resources utilize less obligation financing. Different factors, for example, the grouping of organization proprietorship, the peril of its working benefits and the powerful expense rates have not been found factually huge. These outcomes, bolstered by the strength tests, have affirmed our desire that the supervisors in these nations don't set explicit target influence proportions, yet rather pursue a specific request in the determination of the wellsprings of financing. At the end of the day, the organizations carry on as per the pecking request hypothesis, which is an affirmation of our underlying speculation. The legislatures of these nations should put more exertion on animating the utilization of different wellsprings of financing to ease the conceivable unnecessary organization reliance on the financial area.

Amir Moradi & Elisabeth Paulet (2019) intends to address the impacts of firm-explicit attributes on the development of capital structure among a fair board. They find that development; productivity, charge shields and the impacts of the Euro Crisis are essentially contrarily identified with influence in addition to obligation to-value proportion and are altogether decidedly connected with net value. Furthermore, they recognize that estimate, resource substantial quality, non-obligation charge shields and profit unpredictability are fundamentally decidedly corresponded with influence alongside obligation to-value proportion and have an essentially contrarily connection with net value. Our model tests the affectivity of exchange off, pecking request and office cost speculations of capital structure. Moreover, they separate the full example into three subsamples showing distinctive ventures of retail exchange and administrations, assembling and development in addition to transportation and the travel industry. They find that the transportation and the travel industry is more adversely affected by the Euro Crisis than the other two businesses.

3. RESEARCH METHODOLOGY

The objective of the study is to investigate empirically the determinants of capital structure of Indian companies based on well-known optimal capital structure theories using firm specific data.

4. OBJECTIVES

The main objective of the study is to analyze the influence of various factors determining the capital structure of industries in India. For the purpose of the study, four variables have been chosen to analyze the impact of those variables on capital structure.

- To analyze and determine the impact of the determinants of capital structure of Telecom and Banking companies by investigating the impact of Return on Assets on Debt to Equity.
- To know the impact of Tangibility of capital structure of Banking and Telecommunication industry on Debt to Equity.
- To know the impact of Liquidity on capital structure of Banking and Telecommunication industry on Debt to Equity.

5. DATA SOURCE

This study is entirely based on secondary data. The data is compiled from annual reports of the respective companies, text books, reference books, journals, articles, magazines and from the internet.

The study would add a wealth of knowledge to the researcher. It is a quantitative analysis of the financial data of sample units.

The supplementary data have been collected from the various government records & publications, non-government publication like BSE official Directory on Stock Market.

In addition, the commercial newspapers, magazines, journals, different website of concern sample units, website on corporate finance etc. are used for the period under study.

6. RESEARCH METHODOLOGY

Correlation analysis is used in this study to determine the impact. All the three variables are tested with the debt to equity to determine the most prominent factor for the particular industry i.e., banking and telecom industry.

6.1 DEBT EQUITY RATIO

The debt to equity ratio is a financial ratio indicating the relative proportion of shareholders equity and debt used to finance a company's assets. Closely related to leveraging, the ratio is also known as risk, gearing or leverage. It is measured as book value of Long-term debts to Net worth.

$$\text{Debt Equity Ratio} = \frac{\text{Long term Debts}}{\text{Shareholders Funds}}$$

An acceptable norm for this ratio is considered to be 2:1

6.2 TANGIBILITY

If Fixed Assets constitute a major portion of the total assets of the company it may be possible for the company to raise more of long term debts.

It is measured by,

$$\text{Asset Structure} = \frac{\text{Net Fixed assets}}{\text{Total Assets}}$$

6.3 LIQUIDITY

A liquidity ratio is financial ratio that indicates whether a company's current assets will be sufficient to meet the company's obligations when they become due.

It is measured as,

$$\text{Liquidity} = \frac{\text{Liquid Assets}}{\text{Deposits}}$$

6.4 RETURN ON ASSETS:

Return on assets is a profitability ratio that provides how much profit a company is able to generate from its assets. Return on assets is displayed as a percentage.

It is measured as,

$$\text{ROA} = \frac{\text{Net Profit}}{\text{Total Assets}}$$

7. RESULT AND DISCUSSION

Results of Telecom Industry after correlation analysis

Telecom Industry					
No. of comp	**Names**	**Debt to equity**	**Liquidity**	**ROA**	**Tangibility**
1	Airtel	0.1010189	0.39437499	0.0003864	0.23271068
2	Bsnl	0.1230034	7.0282547	-0.0365786	0.76433289
3	Idea	0.1715529	0.12306166	-0.0491377	0.25282783
4	Jio	0.42482002	5.4120879	0.00284947	0.37744304
5	Tata Docomo	0.04121199	8.05604163	0.0568459	0.94805072
6	MTNL	-1.939015	0.21976958	-0.182959	0.28155353
7	Reliance	0.1360143	1.04594715	0.0265082	0.14642429
8	Telenor	1.2301756	0.33917296	0.0738383	0.37448021
	Correlation		0.13586317	0.88900358	0.09858655

By analyzing, we come to know that Return on assets is the most prominent factor and positively correlated with the Debt to Equity whereas for the banking industry it is less prominent and negatively correlated. So Telecom industry should focus on Return on assets determinant in respect of optimum capital structure.

Results of Banking Industry after correlation analysis

Banking Industry					
No. of banks	**names**	**debt to equity**	**tangibility**	**return on assets**	**Liquidity**
1	Axis	2.746644889	0.005745	0.039876972	1.176047389
2	HDFC	0.584211452	0.0042749	1.713173333	1.053827177
3	SBI	2.415386	0.011576	-0.001895202	0.462943989
4	Canara	1.58712727	0.0134849	-0.684443622	0.885172827

Banking Industry					
No. of banks	**names**	**debt to equity**	**tangibility**	**return on assets**	**Liquidity**
5	ICICI	3.8133638	0.0084187	0.809365663	1.267690826
6	PNB	4.968961	0.0005189	0.006791147	0.852911361
7	YES	3.336759	0.0026641	1.352095743	1.211599668
8	Indusind	1.936677	0.0060406	1.627058598	1.122471754
	Correlation		-0.42913389	-0.256274141	0.071517564

When Tangibility is correlated with Debt to equity it is found that for banking industry it is most prominent factor and negatively correlated. So they should focus on this variable for determining the optimum capital structure for its industry.

8. CONCLUSION

Capital structure remains an imperative and critical issue for and corporate directors. This zone has been explored by numerous noticeable researchers, in particular Modigliani and Miller, Stewart Myers, Stephen Ross, Michael Jensen and William Meckling. Anyway capital structure has broadly been concentrated in the created nations, however just couple of inquires about spotlight on creating nations like India. In this exploration venture, the fundamental goal is to contemplate the noteworthy firm-explicit determinants of capital structure with regards to Banks and Telecommunication Industry of India.

To achieve the intended goal, total of four variables; namely Liquidity, tangibility, Return on Assets and Debt to Equity were selected from renowned previous research works on capital structure. In addition, we have taken 2017-18 audited annual financial statements of 8 commercial banks and telecom industry in Industry.

For analysis, this study employed correlation analysis. The capital structure of the banks and telecom industry measured by one aggregate measure of leverage: debt to equity ratio. Therefore, this variable is correlated against the other three mentioned explanatory variables.

Under Telecom Industry Return on Assets is declared to be the most prominent factor of capital structure determinant as it shows a positive correlation at 0.889003 and others are finds to be less prominent.

Whereas in Banking Industry Tangibility is find to be most prominent as it is negatively correlated with Debt to equity at -0.429133.

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RESEARCH PAPER

AN EXPLORATORY STUDY OF THE SOCIOECONOMIC IMPACT OF BLOCKCHAIN TECHNOLOGY IN EMERGING ECONOMIES: A CASE OF INDIA

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ABSTRACT

The latest game changer in the world of ICT is probably going to be the adoption and use of `Blockchain Technology`. Block chain technology is being misunderstood by the common man. Most of the people relate it to `bitcoin` a crypto or virtual currency which has gained a lot of unsavory reputation in the media lately. "The ongoing discussion regarding blockchain technologies is focused primarily on crypto currencies, but blockchain features and functionalities have developed beyond financial instruments". The underlying technology behind Bitcoin is known as "Blockchain Technology"It is believed that this technology will revolutionise the way we use computers and the Internet. It could help democratize the way we store data, prove ownership, and create verifiable trust relationships. It has the potential to change the global economy and make it more inclusive. This paper makes an attempt to identify the most promising applications of Blockchain and the technology behind it.

KEYWORDS

Blockchain, Crypto Currency, Digital Ledger Technology, Digital Infrastructure.

1. THE PURPOSE OF THIS PAPER

The purpose of this paper is to provide a view of the socio economic impact of the technology on emerging economies like India. The paper will begin with defining and simplifying the concept of what Blockchain technology does and how it works. In subsequent sections the potential role of this technology in dealing with various challenges in an emerging economy, such as: (a) Enabling economical payments and transfers. (b) Ensuring a secure digital infrastructure for identity verification, (c) providing solutions for Health Services (d) securing land rights, (e) Intellectual property rights (f) facilitating good governance by making transactions more secure and transparent.

2. WHAT IS BLOCKCHAIN?

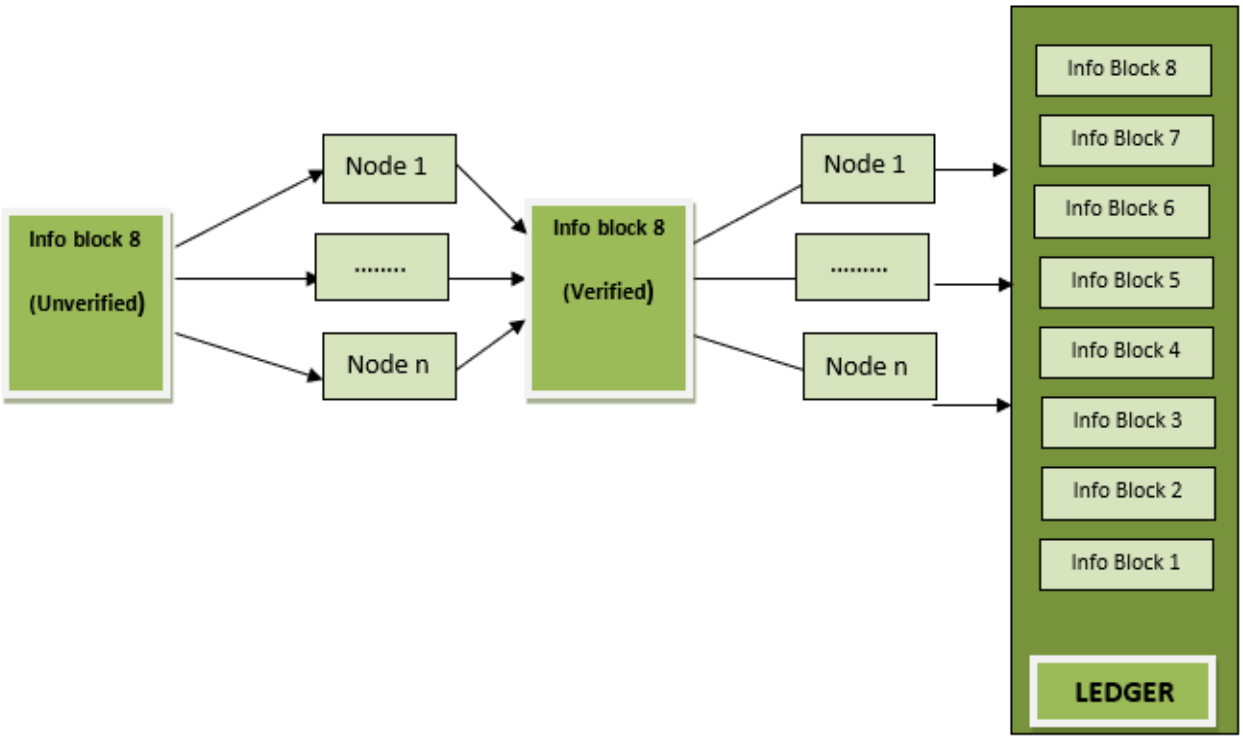
The technology was first developed by a person or group known as "Satoshi Nakamoto". It was initially used for developing crypto currency, but subsequently several other applications were developed using the same technology. Blockchain is based on what is known as "DLT" or "Distributed Ledger Technology". By allowing digital information to be distributed but not modified, Blockchain technology has designed the basis of a new form of internet.

A Blockchain is, basically a time-stamped series of irreversible record of data that is managed by a group of computers not owned by any single body. Each of these blocks of data are protected and bound to each other using cryptographic principles.

The Blockchain network has no central authority — thus it is a democratic system. Since it is a shared and immutable ledger, the information in it is open for anyone and everyone to see.

Hence, anything that is built on the Blockchain is by its very nature transparent and everyone involved is accountable for his or her actions.

A Blockchain has very low **transaction cost**. In case of use of Blockchain by government agencies, the transaction cost may be zero. The Blockchain is a simple yet inventive way of passing information from point A to point B in a fully automated and safe manner. One party to a transaction sets off the process by creating a block. This block is verified by thousands, of computers distributed around the net. The verified block is added to a chain, which is stored across the net, creating not just a unique record, but a unique record with a unique history. Misrepresenting a single record would mean misrepresenting the entire chain in thousands of instances. That is practically impossible. Crypto currencies use this model for monetary transactions, but it can be deployed in many others ways. Blockchain technology has been referred to as "the trust machine".



Not only can the Blockchain transfer and store money, **but it can replace major processes in** financial transactions between two parties. Blockchain innovation may significantly open doors for financial trade and

relationship by diminishing the need to depend on middlemen. The innovation has incredible importance for the advancement of numerous divisions, especially with reference to emerging economies.

3. FINANCIAL SECTOR

It is said that the financial sector is driven by the most basic of human emotions i.e. 'Fear and Greed". Hence the financial sector depends upon the most significant aspect of the human psyche i.e. "Trust". It is to this effect that Blockchain technology will provide gains to the financial sector. The principal utilization of Blockchain innovation was the approach of virtual or cryptographic money. The reason was that this innovation averted the duplication of digital currency, which was the fundamental reason behind the failure of prior types of digital currencies. Blockchain innovation gives a framework to straightforwardness, permanence, decreased hazard, overseeing personalities, decentralizing and trust free exchange framework that aides in bringing down the cost of payments.

Consequently, Blockchain innovation has additionally been alluded to as "the trust machine". It likewise empowers shared exchanges among peers reducing the middlemen and bringing down expenses. Blockchain approves every one of the exchanges and retains a lasting record of them while ensuring that any recognizable proof related data of the clients is kept in secret. In this way all the individual data of the clients is sequestered while substantiating every one of the exchanges.

In this manner, Blockchain could be headed to alter the Financial and Banking Sector, as we probably are aware today. It might altogether eliminate the requirement for mediators like banks by giving distributed exchanges. This would bring about making financial transactions economical and in this manner lead to comprehensive inclusive growth. A great many individuals in India and other emerging economies are still outside the domain of the formal financial framework

Another utilization of Blockchain would be in the field of cross-border payments. The surprisingly high costs and wastefulness related with making across the border payments in specific locales may prove to be an obstacle to financial improvement. Regardless of whether it is a foreign investment in an emerging economy, settlements from abroad or an aid organization funding a project abroad, moving assets from rich to less fortunate nations eventually requires money to be sent across the border. Anyway directing these exchanges through the formal channels can include significant expense and postponement. Worldwide payments are inefficient in light of the fact that there is no single universal payment foundation through which these transactions can be completed. New businesses, for example, "Ripple and Stellar" have planned models that could supplant the basic engineering utilized by banks to conduct cross-border transactions with distributed ledgers.

4. IDENTITY VERIFICATION

Identity verification is another issue, for which Blockchain may be able to provide feasible solutions. India's Aadhaar card is one of biggest exercises ever undertaken for identity verification. Under this program, each Indian citizen is issued a unique 12-digit number that is connected to his or her demographic and biometric data. This identity verification system can be very useful for establishing the identity of less privileged sections of the society, for the purpose of direct transfer of subsidies and government aid etc. However, the Aadhaar system has faced a lot of criticism lately, on account of data sharing and pilferage. This is particularly because it depends upon a single database, and individuals have to share their identity details with several organizations, leading to the risk of misuse.

Blockchain technology could play an important role as a platform for digital IDs. Individuals could store their data on a digital wallet, based on Blockchain technology with a public and private key. This could be used for establishing the individual's identity, his/her characteristics such as citizenship, credit rating, medical or legal history, details of educational qualifications etc. The advantage would be that the system becomes secure and convenient to use, besides being user centric. The main benefits of Blockchain in identity management are reduction of fraud/ increase in transparency and increased efficiency. Blockchain could also solve the problem of KYC sharing among multiple organizations.

With the combination of the decentralized Blockchain principle and a comprehensive system for verifying identity, it has been suggested that a digital ID can be created for each online user to serve as digital watermark affixed to all transactions carried out by the user. If properly utilized, there might be a possibility of ascertaining the truth of individual identity

5. HEALTH RECORDS

After the financial sector, the most promising use of Blockchain may be in the health sector record. Applications include maintaining health records and pharmaceutical supply chain. In this case, Blockchain would be able to provide a secure and efficient alternative to currently available solutions. Blockchain can provide easily accessible and secure patient records, which would avoid duplication of data. Further, this data can be utilized for giving personalized treatment to patients, insurance companies for settling claims and for medical research. This would remove the need for TPAs in the Indian context, thereby reducing the cost of medical insurance services.

India is striving to achieve United Nations' Sustainable Development Goal of providing Universal Healthcare (UHC) by 2030. "Ayushman Bharat Yojana", a forward looking initiative taken by Indian government using Blockchain technology to offer National Health Protection Scheme (NHPS) to demonstrate its commitment to achieve

UHC by 2030 [2].

6. LAND RIGHTS

"The ability of blockchain technology to record transactions on distributed ledgers offers new opportunities for governments to improve transparency, prevent fraud, and establish trust in the public sector" [3].

Land Rights have always been a major cause of disagreement in families, leading to a large number of disputes and lawsuits. The land records are also prone to being damaged, lost etc. Storing and certifying land records on a Blockchain can provide greater legal and economic security for people. The qualities of a Blockchain can help in ensuring transparency, improved efficiency, and reduced chances of fraud.

This will have a major socio-economic impact on a country like India, which has been struggling to provide clean land records for a long time. This will also help in protecting the rights of marginalized farmers in India and while granting compensation and subsidies to them. Land Rights has also been included in United Nations Sustainable Development Goal.

Mass Blockchain Adaption has started in India. "Telagana" Government has initiated a project related to land records.

"The State government intends to make land records tamper-proof by moving them to a blockchain platform in a phased manner", Rajat Kumar Saini, Special Officer, Dharni Project, Telangana [4]

The beauty of this system is that citizens engaged in buying and selling property will require neither any Blockchain accounts nor wallets nor will they experience a change in the way they currently interact with the land registry. The Blockchain engine simply works quietly but powerfully in the background. The solution will also increase citizens' confidence in the government and make the overall customer experience less cumbersome. Most importantly, it will enhance data security and ensure authenticity of land records [5].

7. SMART CONTRACTS

Another innovative use of Blockchain has been the creation of "Smart Contracts". The main aim of this project was to create an independent platform where, using coding, the users could create a virtual contract between them for any purpose they wanted. The contract is executed when the loop of the commands come across certain conditions based on some result from real-world data. The range of the uses for these contracts is practically limitless. Every procedure that needs a third trusted party to be completed could be programmed and run on the platform of their preference. Such contracts could be simple money transactions between private parties, selling and buying of tangible and intangible goods and the possibility of securing financial or other transactions that need hedging due to their instable nature. A smart contract could be used to confirm a real estate transfer playing the role of the notary. At the same time, a user can write his/her own will on the platform and the contract will be executed after his/her death without the intervention of a third party (lawyer, notary, judge,) to confirm it.

For example, an interested buyer can reserve a property by paying $5K to the escrow company currently holding it— thanks to terms of the smart contract, the buyer will get that money back if the seller refuses to sell the property. All paperwork and signatures are facilitated remotely, through the app, making it easy to buy and sell property, regardless of where you live [5].

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