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RVIM JOURNAL OF
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From the Desk of Chief Editor ...✍

We are placing Volume 4 Issue 1 of the RVIM Journal of Management Research in the hands of academic experts and subscribers. RVIM Journal of Management Research contains original research based papers in the areas of Management. The current issue of the Journal includes empirical papers and articles on review of literature that will enhance the managerial knowledge and thoughts in the different functional areas. We do our honest efforts to enlighten fresh thoughts on various fields through our journal, so that the management professionals will be able to get useful insight into the current developments in the field of management. It has been a true effort of publication and trying to bridge the gap between decision makers and researchers.

We thank all the contributors of this issue and appreciate their sincere efforts and support extended to us. We hope that the readers will thoroughly read the papers being broughtout in the journal and give their valuable feedback to enhance the quality in our future publications of the Journal.

Dr. T V Raju
Chief Editor

CONTENTS

DETERMINANTS OF RETAIL INVESTORS BEHAVIOUR AND ITS IMPACT ON INVESTMENT DECISION

Siby Joseph K*
Abeymon Francis**

Abstract : According to economic theorists, investors think and behave "rationally" while buying and selling stocks. Generally investors are presumed to use all available information to form "rational expectations" in investment decision making. In reality, individual investors do not think and behave rationally. To the contrary, driven by greed and fear, investors speculate stocks between unrealistic highs and lows. They are misled by extremes of emotion, subjective thinking and the herd mentality. Indian stock market is considered to be highly volatile, sensitive and reactive to unanticipated shocks and news. At the same time, Indian stock market is resilient and it recovers soon after shocks. The role and importance of individual investors and their trading behaviour is not properly discounted. It is believed that trading behaviour of individual investors rarely influences the stock prices. The paper intends to analyse the determinants of the individual investor behaviour of Indian stock market and factors affecting their investment decisions. An empirical study is conducted to analyse the investment behaviour and decision making style of individual investors. Analytical Hierarchy Process (AHP) is used to find the relative importance of different behavioural traits of the investors.

Keywords : Investor behaviour, Overconfidence, Involvement and Risk preference.

Introduction :

Indian stock market is considered to be highly volatile, sensitive and reactive to unanticipated shocks and news and it takes no time to impact the market activities. However at the same time, Indian stock market is resilient and recovers soon after shocks. The role and importance of individual investors and their trading behaviour in Indian stock market is also very crucial. Unlike institutional investors, individual investors are believed to be less informed, have psychological biases and also thought of as the proverbial noise traders in the stock market. It is believed that trading behaviour of individual investors rarely influences the stock prices. With this perception about the individual investors, majority of trading strategies and stock market policies are designed and focused to their institutional counterparts, thereby ignoring the individual investor's interests to some extent. The purpose of this paper study is to analyse the

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determinants of individual investor behaviour in Indian stock market.

Objective of the Study

The objective of the study is to identify the determinants of investment behaviour and its relative importance in shaping the behaviour of individual investors.

Limitation of the Study

There are various investment avenues in the capital market but the study was limited to investments in equity shares. The reluctance of people to reveal data on income and investment made the task of gathering data difficult.

Theoretical Background

Behavioural finance is an emerging science, and a relatively new and developing field of academic study that exploits the irrational nature of investors. Most of investment decisions are influenced to some extent by our prejudices and perceptions that do not meet the criteria of rationality. Behavioural finance concentrates on irrational behaviour that can affect investment decisions and market prices. It attempts to better understand and explain how emotions and cognitive errors influence investors and the decision-making process. Many researchers believe that the study of psychology and other social sciences shed considerable light on the efficiency of financial markets as well as help to explain stock market volatility and other anomalies. The contribution of behavioural finance is not to diminish the fundamental work that has been done by proponents of efficient market hypothesis. Rather, it is to examine the importance of relaxing unrealistic behavioural assumptions and make it more realistic. It does this by adding more individual aspects of the decision-making process in financial markets. Without these contributions of behavioural finance, certain aspects of financial markets cannot be understood. Despite the importance of individual's investment decisions, we know little about the factors that influence them. Finance research has often ignored the individual investor's decision making process while taking financial investment decisions .There is a need to develop behavioural paradigm to probe the determinants of investor behaviour and their impact on individual investor's financial decision making process. Behavioural finance models ranges from individual investor conduct to market-level outcomes. For the purposes of this research, we adopted an approach favoured by traditional Economist. The current study examines behaviours or biases of individual investors that distinguish them from the rational investors envisioned in classical economic theory, Behavioural Finance Micro (BFMI)

Literature Review

The proposition that has dominated finance is Efficient Market Hypothesis (EMH). There are three basic theoretical arguments that form the basis of the EMH. The first and most significant is that investors are rational. Secondly it is based on the idea that everyone takes careful account of all available

information before making investment decisions. It is related to internal consistency. The third principle is that the decision maker always pursues self-interest.

Behavioural finance is a study of the markets that draws on psychology, throwing more light on why people buy or sell the stocks and even why they do not buy stocks at all. This research on investor behaviour helps to explain the various 'market anomalies' that challenge standard theory. Behavioural finance encompasses research that drops the traditional assumptions of expected utility maximization with rational investors in efficient market. The two building blocks of behavioural finance are cognitive psychology and the limits to arbitrage (Ritter, 2003). Cognitive refers to how people think and the limit to arbitrage when market is inefficient.

Much of the basic theories of behavioural finance concern with a series of new concept under the general heading of 'bounded rationality,' a term associated with Herbert Simon (1947, 1983). It relates to cognitive limitations on decision-making. As a result, human behaviour is made on the basis of simplified procedures or heuristics (Tversky and Kahneman, 1974). This is consistent with the study done by Slovic (1972) on investment risk-taking behaviour. He found that, man has limitations as a processor of information and show some judgmental biases which lead people to overweight information. People also tend to be over react to information (De Bondt and Thaler, 1985, 1987).

Shiller (1999) surveys some of the key ideas in behavioural finance, including Prospect theory, Regret theory, Anchoring, and Market over-and under-reaction. Prospect theory introduced by Khaneman and Tvernsky (1979, 1981, 1986) suggests that people respond differently to equivalent situations depending on whether it is presented in the context of a loss or a gain. "Regret theory" (Larrick, Boles, 1995) is another theory that deals with people's emotional reaction to having made an error of judgment. Anchoring (Yates, 1990), is a phenomenon in which, in the absence of better information, investors assume current prices are right. Market over-or under-reaction (DeBondt and Thaler, 1985), is the consequence of investors putting too much weight on recent news at the expense of other data. People show overconfidence. They tend to become more optimistic when the market goes up and more pessimistic when the market goes down. Hence, prices fall too much on bad environment.

It has long been recognized that a source of judgment and decision biases, such as time, memory, and attention are limited, human information processing capacity is finite. Therefore, there is a need for imperfect decision-making procedures, or heuristics (Simon, 1955, Tversky and Kahneman ,1974) Hirshleifer (2001) argues that many or most familiar psychological biases can be viewed as outgrowths of heuristic simplification, self-deception, and emotion-based judgments. Study done by Kent, Hirshleifer and Subrahmanyan (2001) had found the evidence for systematic cognitive errors made by investors and

these biases affect prices.

According to Kent, et al. (2001), The most common behaviour that most investors do when making investment decision are (1)Investors often do not participate in all asset and security categories, (2)Individual investors exhibit loss-averse behaviour, (3) Investors use past performance as an indicator of future performance in stock purchase decisions, (4)Investors trade too aggressively, (5) Investors behave on status quo, (6) Investors do not always form efficient portfolios, (7) Investors behave parallel to each other, and (8) Investors are influenced by historical high or low trading stocks.

Research Methodology

Data for the study is primarily collected through survey in the form of questionnaires from Retail stock market investors in Kottyam and Ernakulam District. Questions related to investors profile and determinants of investor behaviour were included using a Five point scale. Data collected were analysed through SPSS and Spread Sheet. *Analytic Hierarchy Process (AHP)* is used to find the relative importance of different behavioural traits of the investors in contributing overall investment behaviour. AHP is one of Multi Criteria decision making method that was originally developed by Prof. Thomas L. Saaty. In short, it is a method to derive ratio scales from paired comparisons.

The study identified four broad dimensions of investor behaviour that could have an impact on their investment decisions(*Overconfidence, Investor Optimism, Investor Involvement and Risk Preferences*) that were further divided into different factors and respondents were asked to rate each factor. On the basis of the overall responses of the investors and the ratings that they assign to the factors of the each dimension AHP determine the relative weights for each dimension of the investment behaviour and priorities them in terms of their level of contribution in the formation of behaviour of the investor.

Analysis and Interpretation

1.7.1 Profile of Respondents

The analysis was based on the data collected from respondents using questionnaire. The various demographic and economic factors regarding the respondents were as follows:

The gender ratio of respondents: Of the total respondents, 75.64 % were males and 24.36 % were females.

The age group distribution of respondents : Age of respondents varied between 20 to 70 years. It was aimed to include investors from all categories so that the pattern will get an equitable distribution. Majority of respondents were under 30-40 year age group (34.62%) followed by 40-50 year age group (28.21%). Investors less than 30 years of age group were 25.64% and above 50 years of age group were 11.53%.

The occupational distribution of respondents : The occupational distribution of respondents included

4

Salaried individuals (56.41%), Government employed (23.08%), Private organizations (33.33%),Self employed individuals (24.36%),Business (17.95%) and Agricultural background (6.41%).

The education level distribution of respondents : The majority of investors is having a Bachelors degree (52.56%) followed by Masters Degree (46.15%). It's clear that most of the respondents in this study have good educational backgrounds.

The investment experience of respondents : From the analysis of investment experience of investors, it was found that majority of respondents have an experience of 5-10 years (41.02%), followed by investors, having an experience of less than 5 years (39.74%).

Stock monitoring behaviour of respondents : Of the total respondents, 87.18% daily monitor their investments in stocks and they look for short term profits from favourable price movements. 10.26% of the investors monitor their investment weekly and the rest 2.56% of the investors monitor monthly. Investors with different level of investments are observed to have significantly different monitoring behaviour. The investors with high amount of investments and those with short horizon tend to monitor their investments more frequently when compared to those with low amount of investments and long term investors.

Investment objectives of respondents : By analysing the responses it could be inferred that 46.15% of the investors objectives is to take benefit from the daily price fluctuations, 11.54% of the investors make their investment to earn steady income in the form of dividends, 26.93% of the investors aim for growth objectives, while rest of the investors have multiple investment objectives.

Analysis of Determinants of Investor Behaviour (1)Frequency Analysis of Overconfidence:

Question	S.D(1)	D(2)	N(3)	A(4)	S.A(5)	Total
I am confident of my ability to do better than others in picking stocks *(Stock Picking Ability)*	2 (2.56%)	12 (15.38%)	15 (19.24%)	17 (21.80%)	32 (41.03%)	78 (100%)
I am fully responsible for the results of my investment decisions. *(Self-Control)*	4 (5.13%)	13 (16.67%)	14 (17.95%)	18 (23.08%)	29 (37.17%)	78 (100%)
I have complete knowledge of stock market *(Market Knowledge)*	3 (3.85%)	11 (14.10%)	17 (21.79%)	17 (21.79%)	30 (38.46%)	78 (100%)

Table1 : Frequency Results for Overconfidence
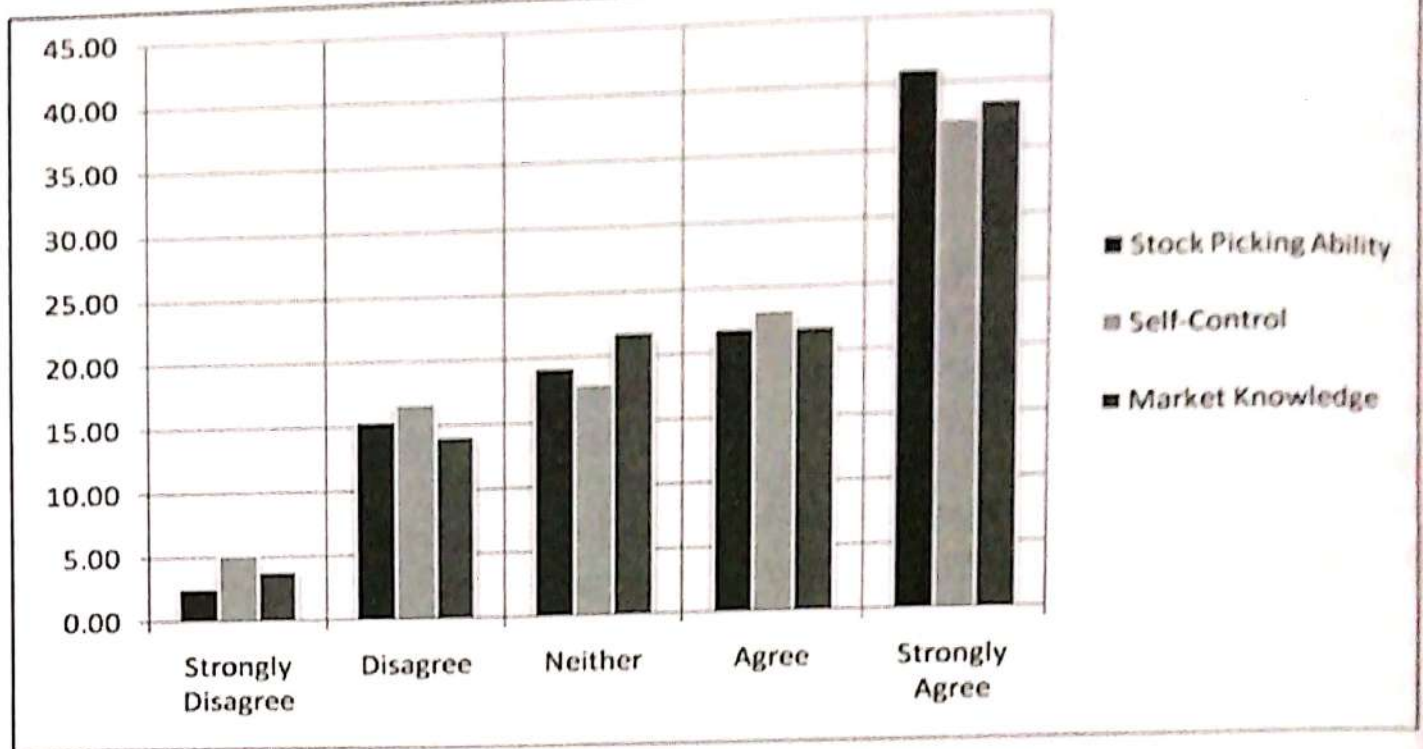
Figure1 : Frequency Diagram of Overconfidence

Source: Primary Data

The frequency results of these three statements tell reveals that investors have high level of Overconfidence as there is greater level of confidence on their *Stock Picking Abilities*, high level of *Self Control* and greater confidence of having Market Knowledge as majority of investors gave rating of 4 and above in case of each parameter.

AHP Analysis of Overconfidence

Feature	Stock Picking Ability	Self Control	Market Knowledge
Stock Picking Ability	1.00	4.00	2.00
Self Control	0.25	1.00	0.50
Market Knowledge	0.50	2.00	1.00

Table 2: Pairwise Comparison Matrix for Overconfidence

Table 3 : Normalized Matrix for Overconfidence

Feature	Stock Picking Ability	Self Control	Market Knowledge	Average
Stock Picking Ability	0.57	0.57	0.57	0.57
Self Control	0.14	0.14	0.14	0.14
Market Knowledge	0.29	0.29	0.29	0.29
Total	1.00	1.00	1.00	1.00

Table 4 : Rank Matrix for Overconfidence

Feature	%	Rank
Stock Picking Ability	57%	1
Market Knowledge	29%	2
Self Control	14%	3

The Analytical Hierarchical Process determined the relative weights of each factor of the dimension of *Overconfidence*. In the overall dimension of Overconfidence the most prominent factor was the Stock Picking Ability that result in successful investment, (approx 57%) followed by *Market knowledge* with approximate weights of 29% and Self Control ability with 14%.

(2) Frequency Analysis of Investor Optimism :

Question	S.D(1)	D(2)	N(3)	A(4)	S.A(5)	Total
I am confident of my ability to do better than others in picking stocks *(Stock Picking Ability)*	22 (28.20%)	16 (20.50%)	8 (10.27%)	13 (16.67%)	19 (24.36%)	78 (100%)
I am fully responsible for the results of my investment decisions. *(Self-Control)*	16 (20.51%)	15 (19.24%)	11 (14.10%)	15 (19.24%)	21 (26.32%)	78 (100%)
I have complete knowledge of stock market *(Market Knowledge)*	16 (20.51%)	10 (12.82%)	12 (15.39%)	20 (25.64%)	20 (25.64%)	78 (100%)

Table 5 : Frequency Results for Optimism

Source : Primary Data
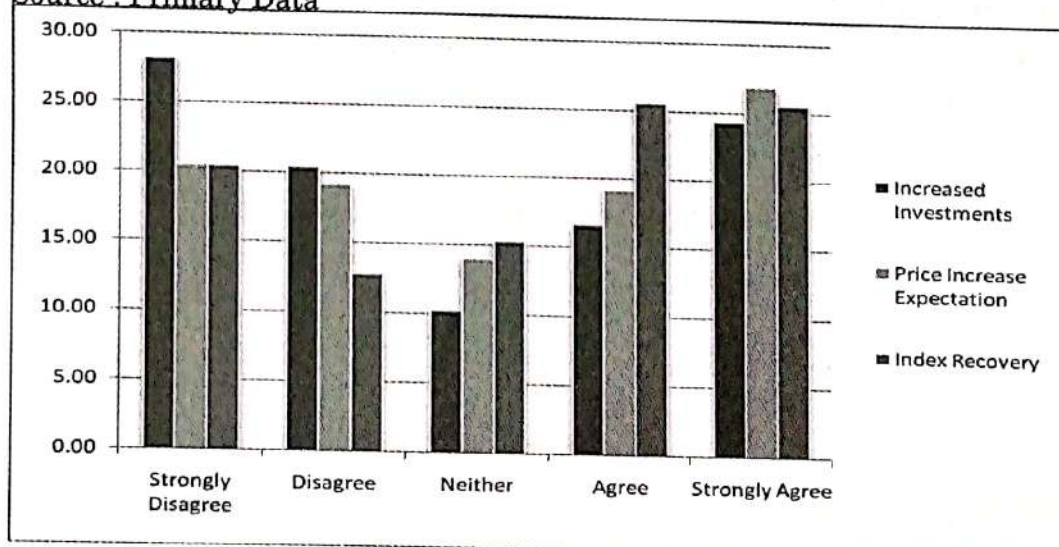
Figure 2 : Frequency Diagram of Optimism

By analysing the responses the overall Optimism among the investors is low but 51.38 % of investors do believe that even if the market falls, it will recover within a few days.

AHP Analysis of Optimism

Table 6 : Pairwise Comparison Matrix for Optimism

Feature	Increased Investments	Price Increase Expectation	Index Recovery
Increased Investments	1.00	0.33	0.50
Price Increase Expectation	3.00	1.00	2.00
Index Recovery	2.00	0.50	1.00

Table 7 : Normalized Matrix for Optimism

Feature	Increased Investments	Price Increase Expectation	Index Recovery	Average
Increased Investments	0.17	0.18	0.14	0.16
Price Increase Expectation	0.50	0.55	0.57	0.54
Index Recovery	0.33	0.27	0.29	0.30
Total	1.00	1.00	1.00	1.00

Table 8 : Rank Matrix for Optimism

Feature	%	Rank
Price Increase Expectation	54%	1
Index Recovery	30%	2
Increased Investments	16%	3

Interpretation : The second determinant Investor Optimism was measured in terms of investor's outlook of the stock market. AHP analysis assigned the highest rank to the factor *Price Increase Expectation* (54%), followed by *Recovery of the Index 30%.* Only 16% of respondents are interested in Increasing Investments. On the whole the optimism among the investors is very low.

(3) Frequency Analysis of Involvement :

Question	S.D(1)	D(2)	N(3)	A(4)	S.A(5)	Total
I am actively involved in trade activity(*Trade Activity*)	2 (2.56%)	1 (1.28%)	19 (24.36%)	21 (26.92%)	35 (44.88%)	78 (100%)
I make investment for making money quickly (*Quick Money*)	7 (8.97%)	4 (5.13%)	13 (16.67%)	29 (37.18%)	25 (32.05%)	78 (100%)

Table 9 : Frequency Results for Involvement
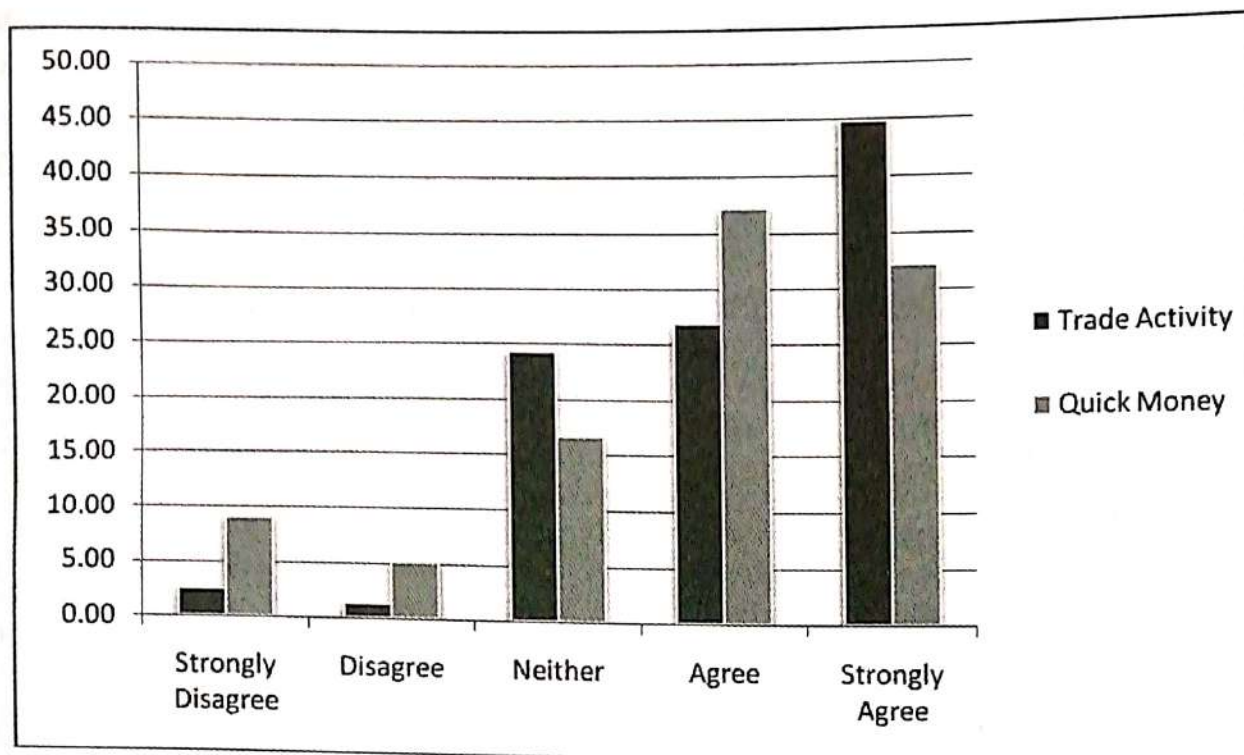
Figure 3 : Frequency Diagram of Involvement

Analysing responses it could be inferred that 69.23% of the respondents are involved in trade activity to make *Quick Money.*

AHP Analysis of Involvement

Feature	Trade Activity	Quick Money
Trade Activity	1.00	2.00
Quick Money	0.50	1.00

Table 10 : Pairwise Comparison Matrix for Involvement

Table 11 : Normalized Matrix for Involvement

Feature	Trade Activity	Quick Money	Average
Trade Activity	0.75	0.75	0.75
Quick Money	0.25	0.25	0.25
Total	1.00	1.00	1.00

Table 12 : Rank Matrix for Involvement

Feature	%	Rank
Trade Activity	75%	1
Quick Money	25%	2

To measure the overall Involvement of Investors in stock trading two factors namely level of *Trade Activity* and motive towards making *Quick Money* were analysed. On the basis of the responses of the investors AHP determined *Trade Activity* has the highest weights approximately 75% while the attitude of making *Quick Money* weights 25% approx.

(4) Frequency Analysis of Risk Preferences / Attitudes

Question	S.D(1)	D(2)	N(3)	A(4)	S.A(5)	Total
I make riskier investments for maximum gain (Enjoyment from *Risky Trading*)	30 (38.46%)	17 (21.80%)	8 (10.26%)	12 (15.38%)	11 (14.10%)	78 (100%)
I usually invest in companies I am familiar with *(Familiarity Bias)*	13 (16.67%)	9 (11.54%)	5 (6.41%)	21 (26.92%)	30 (38.46%)	78 (100%)
I am a risk taker *(Risk taking)*	11 (14.10%)	13 (16.67%)	14 (17.95%)	21 (26.92%)	19 (24.36%)	78 (100%)
I invest mostly in companies with stable expected returns *(Stable Returns)*	3 (3.85%)	7 (8.98%)	13 (16.67%)	26 (33.33%)	29 (37.18%)	78 (100%)

Table 13 : Frequency Results for Risk Preferences/Attitudes
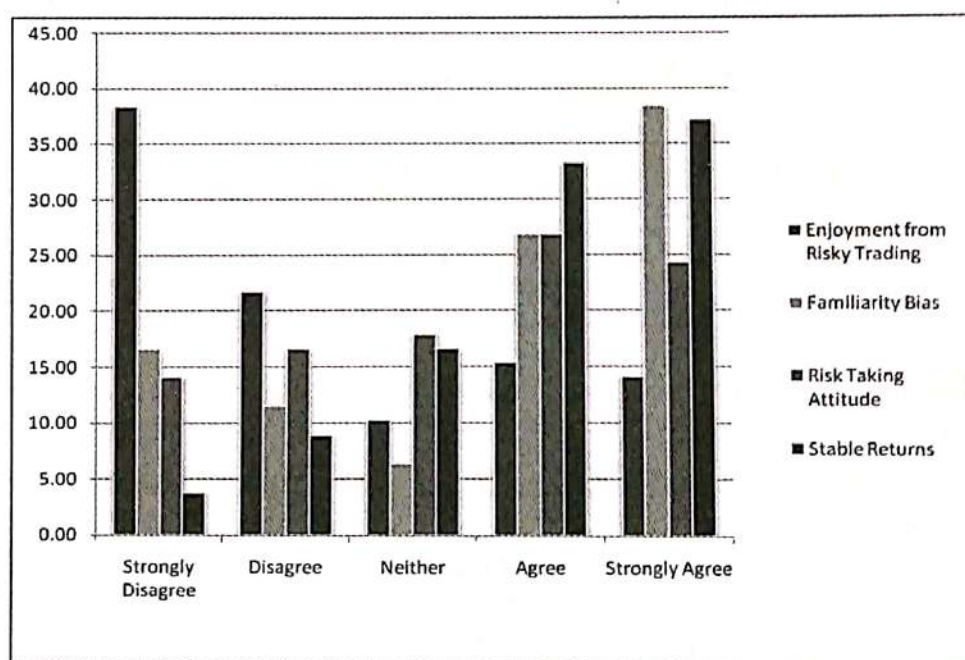
Figure 4 : Frequency Diagram of Risk Preferences/Attitudes

Interpretation : By considering the various factors collectively it could be inferred that majority of investors are risk averse and they do not prefer making riskier investments. Rather they prefer investing in familiar companies that give stable returns.

AHP Analysis of Risk Preferences/Attitudes

Feature	Enjoyment from Risky Trading	Familiarity Bias	Risk Taking	Stable Returns
Enjoyment from Risky Trading	1.00	0.25	0.33	0.33
Familiarity Bias	4.00	1.00	3.00	2.00
Risk Taking	3.00	0.33	1.00	0.50
Stable Returns	3.00	0.50	2.00	1.00

Table 14 : Pairwise Comparison Matrix for Risk Preferences/Attitudes

Feature	Enjoyment from Risky Trading	Familiarity Bias	Risk Taking	Stable Returns	Average
Enjoyment from Risky Trading	0.09	0.12	0.05	0.09	0.09
Familiarity Bias	0.36	0.48	0.47	0.52	0.46
Risk Taking	0.27	0.16	0.16	0.13	0.18
Stable Returns	0.27	0.24	0.32	0.26	0.27
Total	1.00	1.00	1.00	1.00	1.00

Table 15 : Normalized Matrix for Risk Preferences/Attitudes

Table 16 : Rank Matrix for Risk Preferences/Attitudes

Feature	%	Rank
Familiarity Bias	46%	1
Stable Returns	27%	2
Risk Taking	18%	3
Enjoyment from Risky Trading	9%	4

AHP analysis reveals that investors have greater fear of un-known and uncertainty and to avoid it, they make investments in the stocks of the companies which they are familiar with. The factor of *familiarity bias* gets the highest rank among all four factors with weights of 46% approx. The tendency of investing in stocks with *stable* returns weights about 27%. These two factors basically reveal the tendency of risk aversion of the investor. While the other two factors Risk taking and enjoying Risky trading measures the risk loving attitude of the investors. The cumulative score of *risk preference* reveals that investors are risk averse.

(5) AHP Analysis of Determinants of Investor Behaviour

Feature	Overconfidence	Investor Optimism	Involvement	Risk Preferences/Attitudes
Overconfidence	1.00	5.00	3.00	2.00
Investor Optimism	0.20	1.00	0.33	0.20
Involvement	0.33	3.00	1.00	0.33
Risk Preferences/Attitudes	0.50	5.00	3.00	1.00

Table 17 : Pairwise Comparison Matrix of Behavioural Determinants

Feature	Overconfidence	Investor Optimism	Involvement	Risk Preferences/Attitudes	Average
Overconfidence	0.49	0.36	0.41	0.57	0.46
Investor Optimism	0.10	0.07	0.05	0.06	0.07
Involvement	0.16	0.21	0.14	0.09	0.15
Risk Preferences/Attitudes	0.25	0.36	0.41	0.28	0.32
Total	1.00	1.00	1.00	1.00	1.00

Table 18 : Normalized Matrix of Behavioural Determinants

Table 19 : Rank Matrix of Behavioural Determinants

Feature	%	Rank
Overconfidence	46%	1
Risk Preferences/Attitudes	32%	2
Involvement	15%	3
Investor Optimism	7%	4

AHP determined that *Overconfidence* carries more than 46% weight, so it is the most prominent behavioural dimension that has greater impact in the formation of overall behaviour followed by *Risk Preferences/Attitudes* with a weight of 32% and other two dimensions *Involvement* and Investor Optimism with weights 15% and 7% respectively.
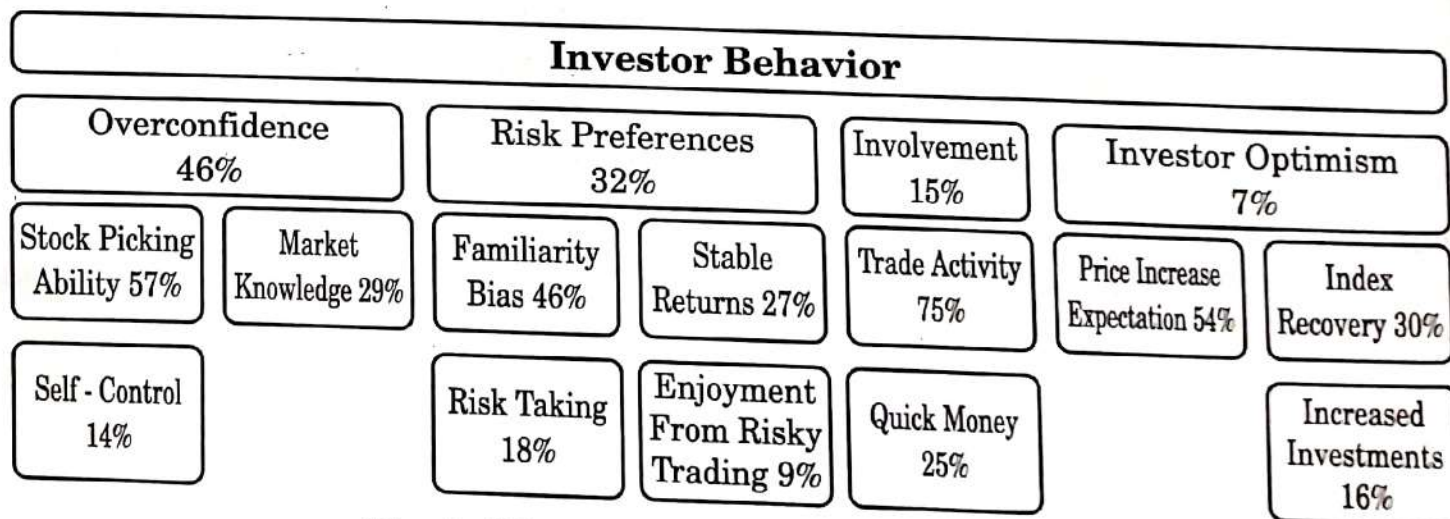
Fig 5. AHP Results of Investor Behaviour

Findings

The Investment behaviour of individual investor has been explained in terms of four broad behavioural dimensions viz; Overconfidence, Investor involvement, Optimism and *Risk attitude* that are measured in terms of different factors. The findings suggest that the dimension of overconfidence plays an important role in the determination of overall behaviour, followed by the role of *risk preferences, involvement and optimism.*

In this study overconfidence bias is measured in terms of four factors: self control, market knowledge, stock selection ability and specific skills. It's clearly found that majority of investors believe that they have better stock picking ability than other investors. They also believe that they have complete knowledge of market particularly those investors who have many years of investment experience. They are found to be confident of their specific skills that lead them to earn profits over their investments.

When studied the level of optimism among investors in terms of their outlook of future of the stock market, we found that investors are not much optimistic about the future of market. It's found that some investors want to keep their investments in the stock markets only because the stock prices have declined and they do not want to sell their stocks at a loss. Very few showed willingness to increase their investments in the stock market in next 12 months because they do not believe that stock market will not scale up immediately.

The dimension of investor involvement is measured in terms of their trade activity and tendency to make quick money. It was found that investors having short term profit seeking objectives are found to have greater level of involvement as compared to those with long term investment objectives as they have greater tendency to make quick money in short time periods.

When measured risk preferences of individual investors we found that investor's exhibit risk averse behaviour and they prefer investing in familiar companies with stable returns. But there are some investors who showed a strong preference for taking risk. It's found that investors with long term investment objectives and those with ages above 50 are more risk averse when compared to others.

Majority of investors seem to prefer to gamble with a possibility for a gain .Analysis shows that individuals have inconsistent attitudes towards risk in making investment decisions. They exhibit risk aversion in a profit making situation while risk seeking behaviour is exhibited in a loss making situation that explains the phenomenon of mental accounting. Moreover the presence of disposition effect and representativeness are also confirmed by this study.

Conclusion

Market participants have relied for a long time on the notion of efficient markets and rational investment behaviour when making financial decisions. However, the idea of fully rational investors always maximizing

their utility and demonstrating perfect self-control is not realistic and the market inefficiency in the form of anomalies and irrational investor behaviour have been observed more frequently during the past decades. The results obtained from the study suggest that the behaviour of individual investors is irrational to a greater extent. Study revealed that individual investors have high level of involvement and overconfidence while they are not much optimistic about the future outlook of market and moreover they have an aversion to risk.

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THE ORGANISATIONAL TYPE IS ALSO A SIGNIFICANT FACTOR OF IMPACT TO BE CONSIDERED IN INDUSTRIAL RELATIONS.

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Dr. S. Pruthviraja Pande **

Abstract : *This Study was conducted on the Study and the Impact of Industrial Relations on Quality and Productivity in Manufacturing Industries in Karnataka State. As the study was made on all types of Industries like Government Sector, Public Sector and Private Sector Industries, the analysis and the inferences comparatively among all these sectors have significant variance and the responses from the respondents is resulting to a derived and proved evidence to strengthen the statement that there is an Impact of the Type of Organisation which is a significant factor to be considered in Industrial Relations. The Study concludes inferring from the analysis of this Objective, the conclusion is drawn that the type of the organisation – Government, Public Sector or Private Sector – is an important factor in deciding the parameters of industrial relations.*

Key Words : *Industrial Relations, Organisation, Manufacturing Industries, Type of Organisation*

Introduction : In any organisation, Industrial Relations is one tool which enhances the production, inter-personal relations, better industrial relations between the management and the working staff along with better performance, updation of skills, technology including training and motivations. However, there are some facts that influence Industrial Relations in any organisation as for as any research study, survey or opinions are concerned. I have Interviewed 10 each randomly selected employees for primary data from 10 Government enterprises, 15 Public Sector Units and 25 Private Sector organisations for the research study.

The samples are drawn from the population of different levels of employees differing in their age profile, gender, educational qualification, working status etc., which is heterogeneous in nature. For this purpose, the population was divided into various homogeneous strata and from these strata, random samples of employee respondents have to be taken. Hence the **Stratified Random Sampling Method** was used for this study by taking **500 as the sample size of respondents.** Stratified sampling techniques are generally used when the population is heterogeneous, or dissimilar, where certain homogeneous, or similar, sub-populations can be isolated (strata). The sample size of 500 respondents is categorized as under:

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Table No.1 – No. of Respondents in different types of Companies

Company Type	No. of Respondents
Government Companies	100
Public Sector Companies	150
Private Sector Companies	250
Total No. of Respondents	**500**

The data collected has been tabulated and analysed to arrive at inferences in this chapter. Statistical tools such as tabulation & diagrammatic/graphical presentation of the data collected, and analytical tools like ratios, percentages are used in this Study. Graphical representation of data has been carried out with the help of MS-EXCEL software. Since the Study has more than 50 variables to be covered, these are grouped into several Factors and this has been achieved with the help of Factor Analysis using SPSS software. This software programme is extensively used to draw various bi-variate frequency distributions involving two variables & correlation coefficients between related variables. Hypothesis Testing is carried out by using Analysis of Variance procedures & Levene's Statistic. The study of the association between related attributes is analysed with the help of the Spearman's Correlation Coefficients.

Various demographic variables are included in the Study to ascertain their effect on industrial relations existing in an organisation. Following is the list of the demographic variables covered by the Study.

A] Age of the respondents B] Gender of the respondents C] Qualification of the respondents D] Grade of Employment of the respondents and E] Scale of Employment of the respondents.

OBJECTIVES OF THE STUDY

1. To analyze the impact of Industrial relations (IR) on the parameters of quality and production in manufacturing industries.

2. To study whether the respondents differ significantly on their opinion on Industrial Relations based on demographic variables like qualification, grade of employment, scale of employment etc.

3. The organisational type is also a significant factor of impact to be considered in Industrial Relations.

4. To study the impact of IR on Quality of Work Life

The following paragraphs deal with the effect of these demographic variables on the industrial relations in an organisation. The factor Industrial Relations includes the following parameters as per the results of the Factor Analysis conducted: a) Industrial safety requirements b) Motivation by superiors c) Stress on enhancement of work skills d) Better communication channels e) Communication of Information f) Training g) Presence of inputs and h) Grievance Cell

The responses given by the sample employees of the organisations are assumed to not to vary significantly based on the demographic variables

on the Industrial Relations in organisations in the form of null hypothesis for testing the significance.

The Study covered the respondent employees in three different types of organizations, Government Companies, Public Sector Companies and Private Sector Companies. The present Objective aims to study whether the type of organisation is an important and significant factor to be considered in defining Industrial Relations.

The analysis is carried out in the following paragraphs:

(1) The analysis of the responses by the respondent employees of different types of organisations on the parameter viz., the Industrial Safety Requirements of Industrial Relations:

The analysis is carried out by considering the opinions of the respondent employees of different types of organisations in the form of ratings over a 5-point scale on the parameters of Industrial Relations identified with the help of the Factor Analysis. The results are presented in the following paragraphs:

Table No. : Table showing the opinion of the respondent employees belonging to different types of organisations on the Industrial safety requirements

Company Type		Opinion on Industrial safety requirements					Total
		Not True	Partly True	True	Very True	Not Sure	
GOVERNMENT	No. of Respondents	12	10	49	18	11	100
	% within Company Type	12.0%	10.0%	49.0%	18.0%	11.0%	100.0%
	% within the parameter	57.1%	14.3%	16.7%	20.0%	44.0%	20.0%
	% of Total	2.4%	2.0%	9.8%	3.6%	2.2%	20.0%
PUBLIC SECTOR	No. of Respondents	3	15	101	30	1	150
	% within Company Type	2.0%	10.0%	67.3%	20.0%	0.7%	100.0%
	% within the parameter	14.3%	21.4%	34.4%	33.3%	4.0%	30.0%
	% of Total	.6%	3.0%	20.2%	6.0%	.2%	30.0%
PRIVATE SECTOR	No. of Respondents	6	45	144	42	13	250
	% within Company Type	2.4%	18.0%	57.6%	16.8%	5.2%	100.0%
	% within the parameter	28.6%	64.3%	49.0%	46.7%	52.0%	50.0%
	% of Total	1.2%	9.0%	28.8%	8.4%	2.6%	50.0%

	No. of Respondents	21	70	294	90	25	500
TOTAL	% within Company Type	4.2%	14.0%	58.8%	18.0%	5.0%	100.0%
	% within the parameter	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	% of Total	4.2%	14.0%	58.8%	18.0%	5.0%	100.0%

SOURCE : Primary Data

The findings of the above table are as follows:

- Of the 500 respondents in all, 294 respondents constituting 58.8% of the total, are fully concurring with the opinion that the parameters viz., Government and Labour Ministry sponsored Schemes like fire fighting, First Aid, Medical Facilities, measures for checking Industrial Hazards like pollution, accident are strictly adopted in the organization. The percentage of respondents who are concurring with the truthfulness of these parameters has been worked out to 90.8. Only 4.2 percent of the respondents are differing in their perceptional ratings of the parameters and remaining 5 percent are not sure of taking either side of the opinion.

- The study covered 100 respondents from the Government organizations. Of these 100 respondents, 49 are of the opinion that the statements on the parameters of industrial relations in an organization are true and they concur with these statements.

Ten of these respondents are partly concurring with these statements. The number of respondents who strongly concur with these parameters are 18. The number of respondents who do not concur are 12 and those who are not sure of their opinion are 11.

- The study covered 150 respondents from the Public Sector organizations. Of these respondents, 101 constituting 67.3 percent of the respondents are concurring with the parameters of industrial relations. In all, 146 respondents with 97.33 percent are concurring with the truthfulness of the parameters of industrial relations. Only 2 percent of the respondents are not concurring with these parameters and a very low percentage of 0.7 respondents are in dilemma as to whether they have to concur or to differ with these parameters.

- The number of respondents from Private Sector organizations that the study has considered is 250. This represents 50 percent of the sample size. Of these 250 respondents, 231 respondents

constituting 92.4 percent are concurring with the truthfulness of the parameters of industrial relations. Only 2.4 percent of these respondents are not agreeing with these parameters and 5.2 percent have not decided of their decision to concur or to differ with these parameters.

- Among the respondent employees from the Government organizations, 77 percent of them are concurring with the truthfulness of the statements on the parameters of the industrial relations prevailing in their organizations.

- Of the respondent employees from the Public Sector organizations, 97 percent of them concurring with the truthfulness of the statements on the parameters of the industrial relations prevailing in their organizations.

- Among the respondent employees of the Private Sector organizations, 92 percent of them are concurring with the truthfulness of the statements on the parameters of the industrial relations prevailing in their organizations.

All these findings are summarized and are presented in the following graph:

Chart showing the opinion of respondents on safety requirements

	Not True	Partly True	True	Very True	Not Sure	Total
Government	12	10	49	18	11	100
Public Sector	3	15	101	30	1	150
Private Sector	6	45	144	42	13	250
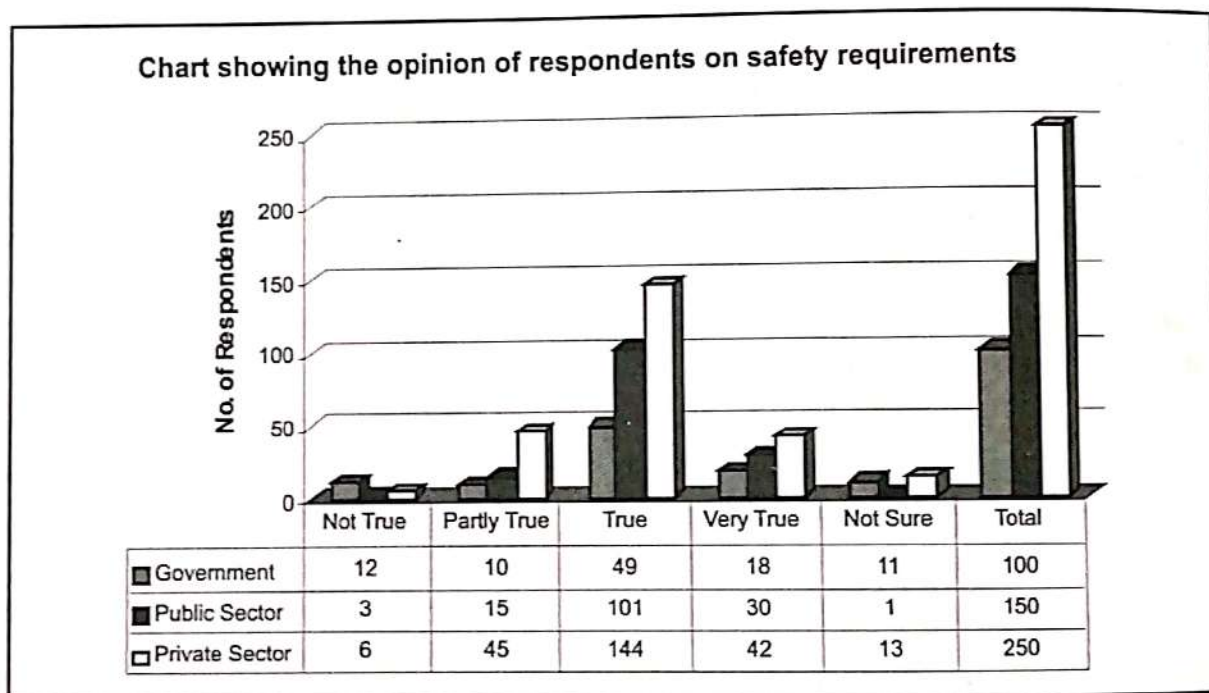
Inference : All the above findings indicate that the type of the company is a significant factor in analysing the parameters of industrial relations. It is seen that more than 75 percent of the employee respondents in all the three types of organizations are very vocal in expressing their opinions on the truthfulness of the parameters of industrial relations.

Further to these analyses of the data pertaining to industrial relations, the Study also interested to bring in

whether the type of organization has a significant impact on the parameters of industrial relations. This is carried out with the help of testing of the hypothesis concerned.

Hypothesis Testing : The hypothesis whether the type of the organizations has a significant impact on the parameters of industrial relations is tested as follows:

Null Hypothesis : There is no significant impact of the type of the organizations on the parameters of industrial relations.

Alternative Hypothesis : There is a significant impact of the type of the organizations on the parameters of industrial relations.

Level of Significance : 0.05.

The results of Analysis of Variance of the type of the organizations on the parameters of industrial relations are as follows:

ANOVA between the Parameters of Industrial Relations and the Type of the Companies

Parameters of IR		Sum of Squares	df	Mean Square	F	p-value
Industrial safety requirements	Between Groups	0.083	2	0.041	0.060	0.942
	Within Groups	342.349	497	.689		
	Total	342.432	499			
Motivation by superiors	Between Groups	3.363	2	1.681	2.420	0.090
	Within Groups	345.299	497	.695		
	Total	348.662	499			
Stress on enhancement of work skills	Between Groups	5.485	2	2.742	3.138	0.044
	Within Groups	434.313	497	.874		
	Total	439.798	499			
Better communication channels	Between Groups	3.267	2	1.633	1.692	0.185
	Within Groups	479.683	497	.965		
	Total	482.950	499			
Communication of Information	Between Groups	1.634	2	.817	0.751	0.473
	Within Groups	540.916	497	1.088		
	Total	542.550	499			
Training	Between Groups	.248	2	.124	0.132	0.877
	Within Groups	468.064	497	.942		
	Total	468.312	499			

Presence of inputs	Between Groups	.248	2	.124	0.187	0.830
	Within Groups	329.704	497	.663		
	Total	329.952	499			
Grievance Cell	Between Groups	4.345	2	2.172	1.442	0.237
	Within Groups	748.567	497	1.506		
	Total	752.912	499			

Test Results:

The null hypothesis only in case of "stress on enhancement of work skills" is rejected as the p-value for this parameter is 0.044 and is less than the specified level of significance. Therefore, the type of the company has a significant impact on the "stress on enhancement of work skills".

In the case of all other parameters, the p-values are all higher than the level of significance specified (0.05) and hence the null hypothesis is accepted. In this case, the type of the company has no significant impact on the other parameters of industrial relations viz., the industrial safety requirements, motivation by superiors, better communication channels, communication of information, training, and presence of inputs and Grievance Cell.

DATA ANALYSIS OF INDIVIDUAL PARAMETERS OF INDUSTRIAL RELATIONS:

The data analysis of the parameters of industrial relations individually with the type of the organizations is carried out and the results are as follows:

(1). Data analysis of the type of organization vis-à-vis Industrial Safety Requirements in the organization:

The data are tabulated as under:

	Opinion on Industrial Safety Requirements					
	Not True	Partly True	True	Very True	Not Sure	Total
Government	12	10	49	18	11	100
Public Sector	3	15	101	30	1	150
Private Sector	6	45	144	42	13	250
Total	21	70	294	90	25	500

SOURCE : Primary Data

It is seen from the above table that a very significant 454 number of respondents constituting around 91 percent of the total respondents are agreeing with the parameters of industrial relations in their organizations. The percentage of respondents in Government organizations is worked out to 77, in Public Sector organizations it is 97 percent and in Private Sector organizations the percentage is worked out to around 92.

Inference : This clearly proves that the respondents are aware of the industrial safety requirements in their organizations and are opting them as well. This opinion is expressed by more than 75 percent of the respondents in all the three types of the organizations.

(2). Data analysis of the type of organization vis-à-vis Motivation by Superiors in the organization:

The data for analysis are as follows:

	Opinion on Motivation by Superiors					
	Not True	Partly True	True	Very True	Not Sure	Total
Government	10	25	45	12	8	100
Public Sector	4	28	91	25	2	150
Private Sector	8	39	150	40	13	250
Total	22	92	286	77	23	500

SOURCE : Primary Data

It is seen from the above table that a very significant 455 number of respondents constituting 91 percent of the total respondents are agreeing with this parameter of industrial relations in their organizations. The percentage of respondents in Government organizations is worked out to 82, in Public Sector organizations it is 96 percent and in Private Sector organizations the percentage is worked out to around 92.

Inference : This clearly proves that the respondents are aware of the importance of the Motivational strategies to be adopted by the senior levels of management in their organizations and are also concurring with this parameter. This is evident from that fact that more than 80 percent of the respondents in all the three types of the organizations have concurred with this parameter.

(3). Data analysis of the type of organization vis-à-vis Stress on Enhancement of Skills in the organization:

The data for analysis are as follows:

Opinion on Stress on Enhancement of Work Skills						
	Not True	Partly True	True	Very True	Not Sure	Total
Government	6	18	52	12	12	100
Public Sector	7	26	88	25	4	150
Private Sector	26	57	122	31	14	250
Total	**39**	**101**	**262**	**68**	**30**	**500**

SOURCE : Primary Data

It is seen from the above table that a very significant 397 number of respondents constituting 79.40 percent of the total respondents are agreeing with this parameter of industrial relations in their organizations. The percentage of respondents in Government organizations is worked out to 65, in Public Sector organizations it is 90 percent and in Private Sector organizations the percentage is worked out to around 79.

The above table provides the information that a very significant 431 number of respondents constituting 86.20 percent of the total respondents are agreeing with this parameter of industrial relations in their organizations. The percentage of respondents in Government organizations is worked out to 82, in Public Sector organizations it is around 93 percent and in Private Sector organizations the percentage is worked out to 84.

Inference : This clearly proves that the respondents are aware of the importance of the Stress that they undergo when there is an insistence on the enhancement of work skills for the workers/employees. The respondents have understood this importance and have concurred with this parameter. This is evident from that fact that more than 80 percent of the respondents in all the three types of the organizations have concurred with this parameter.

(4). Data analysis of the type of organization vis-à-vis better Communication Skills in the organization:

The data considered for the analysis are:

Opinion on Better Communication Channels						
	Not True	Partly True	True	Very True	Not Sure	Total
Government	15	29	40	8	8	100
Public Sector	11	34	91	7	7	150
Private Sector	28	48	122	35	17	250
Total	54	111	253	50	32	500

SOURCE : Primary Data

The data in the above table indicate that a large number of respondents to an extent of 414 constituting 82.80 percent of the total respondents are agreeing with this parameter of industrial relations in their organizations. The percentage of respondents in Government organizations is worked out to 77, in Public Sector organizations it is 88 percent and in Private Sector organizations the percentage is worked out to around 82.

Inference: This clearly proves that the respondents are aware of the importance of better communication skills for the workers/employees. The respondents have understood this importance and have concurred with this parameter. This is evident from that fact that more than 75 percent of the respondents in all the three types of the organizations have concurred with this parameter.

(5). Data analysis of the type of organization vis-à-vis Communication of Information in the organization:

The data are as follows:

	Opinion on Communication of Information					
	Not True	Partly True	True	Very True	Not Sure	Total
Government	21	15	45	5	14	100
Public Sector	9	24	93	18	6	150
Private Sector	30	46	120	31	23	250
Total	60	85	258	54	43	500

SOURCE : Primary Data

Inference : This clearly proves that the respondents are aware of the importance of the flow of information at all levels in the organizations known as communication of information. Different strategies to be adopted by the senior levels of management in their organizations to inform their staff about their benefits and consequences are required to maintain harmonious relations between the staff and the management. The respondents know the importance of communication of information and this is evident from that fact that more than 60 percent of the respondents in Government organizations and more than 75 percent in Private and Public Sector organizations have concurred with this parameter.

(6). Data analysis of the type of organization vis-à-vis Training in the organization:

The data are as follows:

Opinion on Communication of Information						
	Not True	Partly True	True	Very True	Not Sure	Total
Government	13	21	41	11	14	100
Public Sector	6	34	87	21	2	150
Private Sector	21	58	124	27	20	250
Total	40	113	252	59	36	500

SOURCE : Primary Data

The data in the above table indicate that a large number of respondents to an extent of 424 constituting 84.80 percent of the total respondents are agreeing with this parameter of industrial relations in their organizations. There are 73 percent of respondents in Government organizations, 94.66 percent in Public Sector organizations and in Private Sector organizations the percentage is worked out to around 83.60.

Inference : This clearly proves that the respondents are aware of the importance of Training for the workers/employees. The respondents have understood this importance and have concurred with this parameter. This is evident from that fact that more than 70 percent of the respondents in Government organizations have concurred with this parameter and more than 80 percent of the respondents in Public & Private sector organizations have concurred with this parameter. The awareness of necessity of Training in improving the industrial relations is high among the respondents of Public & Private sector organizations than in the Government organisations.

(7). Data analysis of the type of organization vis-à-vis Presence of Inputs in the organization :

The data are as follows :

Opinion on Presence of Inputs						
	Not True	Partly True	True	Very True	Not Sure	Total
Government	8	7	64	17	4	100
Public Sector	1	25	87	35	2	150
Private Sector	14	30	143	50	13	250
Total	23	62	294	102	19	500

SOURCE : Primary Data

The data in the above table indicate that a very large number of respondents to an extent of 458 constituting 91.60 percent of the total respondents are agreeing with this parameter of industrial relations in their organizations. There are 88 percent of respondents in Government organizations, 98 percent in

Public Sector organizations and in Private Sector organizations the percentage is worked out to around 89.20.

Inference : This clearly proves that the respondents are aware of the importance of presence of required inputs in the organisations This is evident from that

fact that more than 85 percent of the respondents in all the three types of organizations have concurred with this parameter.

(8). Data analysis of the type of organization vis-à-vis Presence of Grievance Cell in the organization:

The data are as follows :

	Opinion on Grievance Cell					
	Not True	Partly True	True	Very True	Not Sure	Total
Government	25	20	34	7	14	100
Public Sector	23	16	78	18	15	150
Private Sector	57	34	105	23	31	250
Total	105	70	217	48	60	500

SOURCE : Primary Data

It is seen from the above table that a number of respondents to the extent of 335 out of the sample size interviewed constituting 67 percent are concurring over the requirement of Grievance Cells in their organisations. The percentage of respondents in Government organizations is worked out to 61, in Public Sector organizations it is 74.66 percent and in Private Sector organizations the percentage is worked out to around 64.80.

Inference : This clearly proves that the respondents are aware of the importance of the presence of Grievance Cells to handle their work & personal related grievances. More than 60 percent of the respondents in all the three types of organizations have concurred with this parameter.

These details are shown in the following graphs as well:

Opinion on Industrial Safety Requirements

Opinion on Motivation by Superiors

Opinion on Stress on Enhancement of Work Skills

Opinion on Better Communication Channels

Opinion on Communication of Information

Opinion on Training

Opinion on Presence of Inputs

Opinion on Grievance Cell
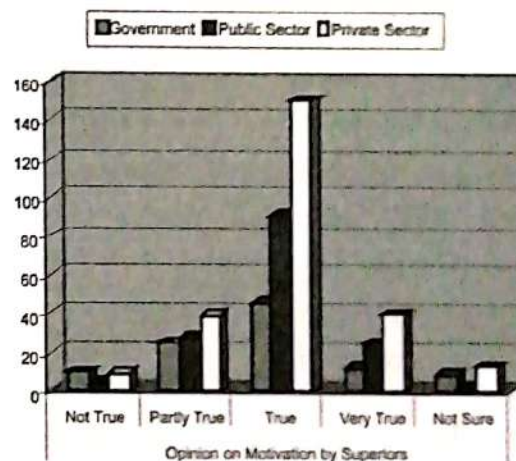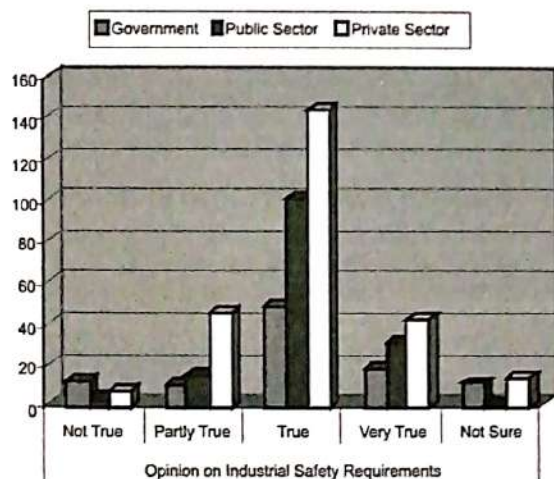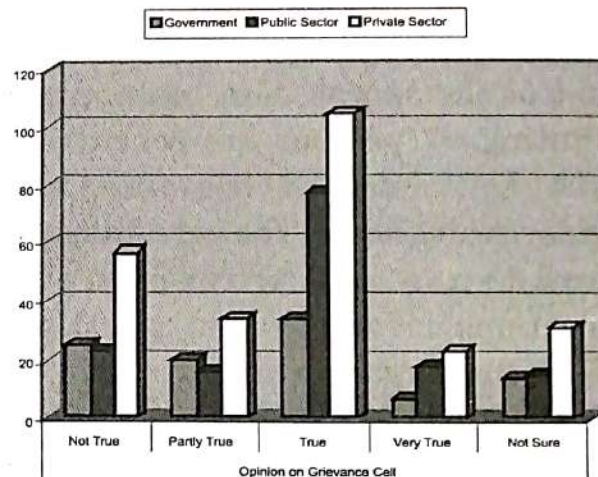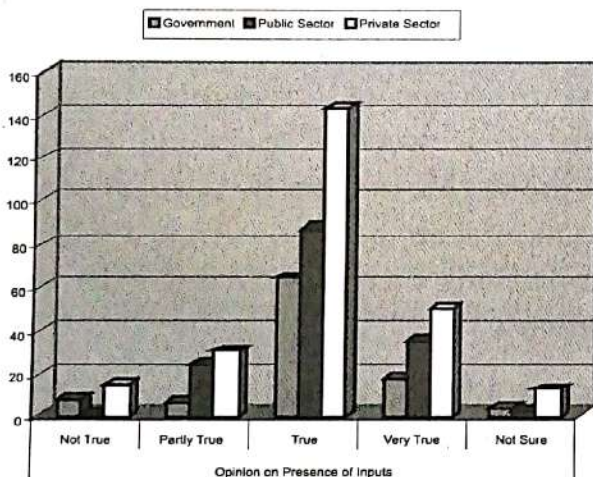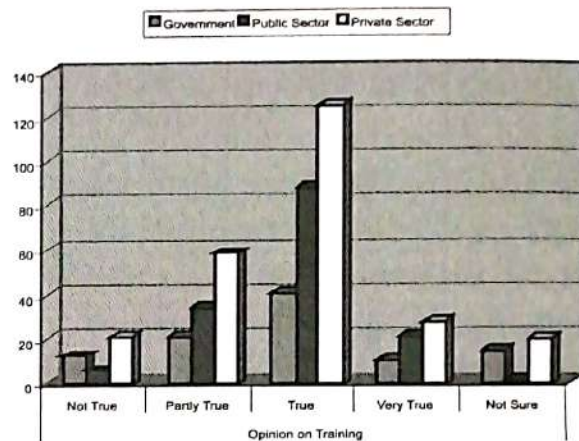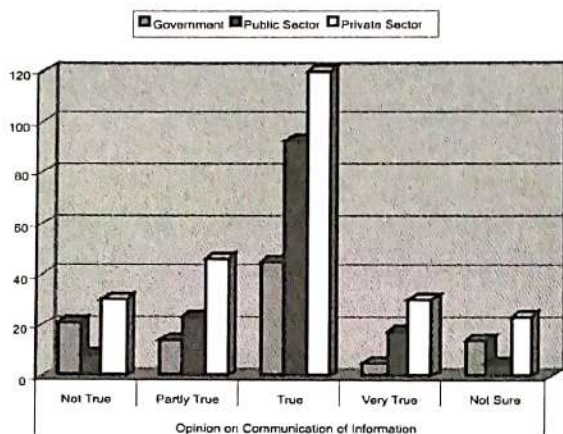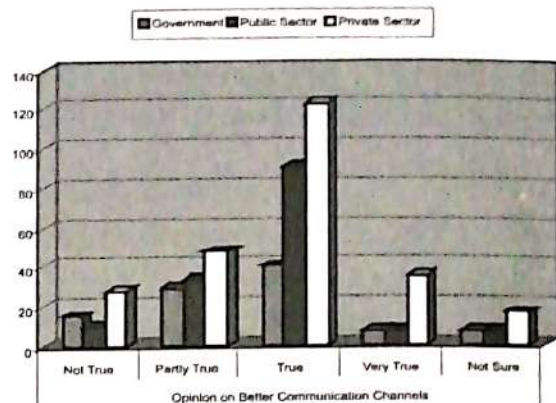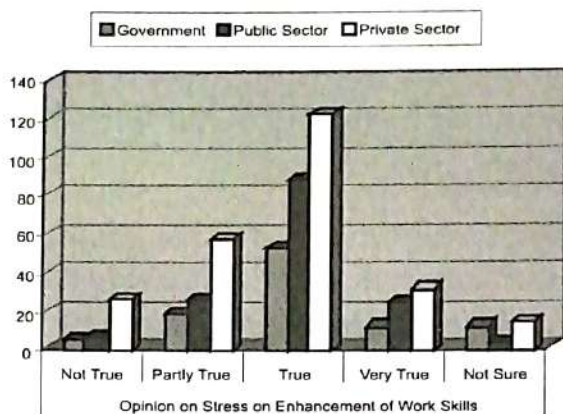
Apart from the analysis of the individual parameters of industrial relations based on the type of organisations that the respondents are working in, an attempt is made to know the overall percentage of respondents & their preferential ratings on these parameters in the following paragraphs:

Following graph is a percentage bar diagram which shows the percentage of respondents and their opinion on the following parameters of industrial relations:

1. *Industrial safety requirements*

2. *Motivation by superiors*

3. *Stress on enhancement of work skills*

4. *Better communication channels*

5. *Communication of Information*

6. *Training*

7. *Presence of inputs*

8. *Grievance Cell*

Percentage Bar Diagram showing the opinion of the respondents on the parameters of industrial relations

■ Not True   ■ Partly True   □ True   □ Very True   ■ Not Sure
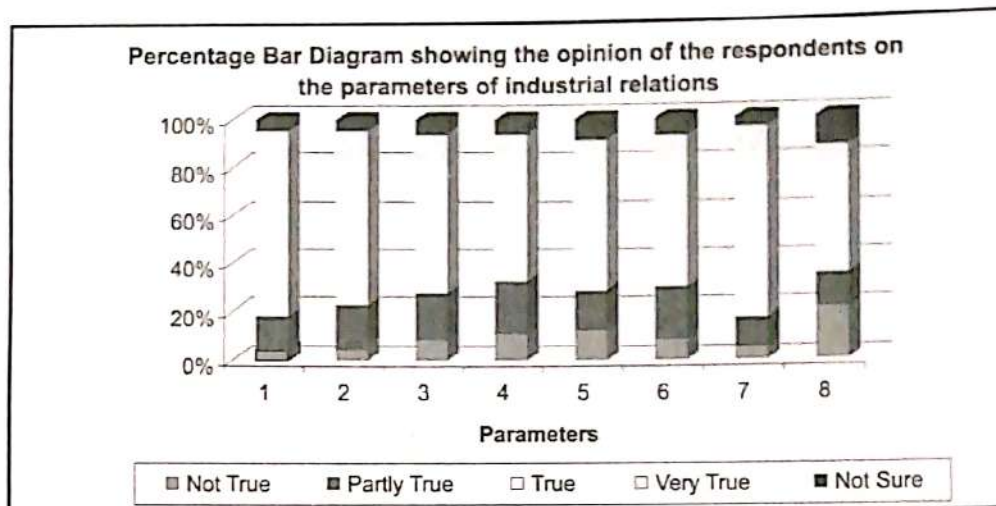
From the above diagram, the following inferences are drawn:

- Almost 80 percent of the respondents are concurring with the statements on all the parameters of industrial relations in the organizations.

- A very less percentage to an extent of almost 10 percent of the respondents are not in agreement with the statements on the parameters except in the parameter of presence of Grievance Cell in the organizations where the percentage touches almost 20%.

- Another 10 percent of the respondents are in a predicament as to which side they can chose for – whether to concur or to differ with reference to the statements on the parameters of industrial relations.

CONCLUSION : *From the analysis of this Objective, the conclusion is* *drawn that the type of the organisation – Government, Public Sector or Private Sector – is an important factor in deciding the parameters of industrial relations.*

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INNOVATIVE STRATEGIES OF CRM TO INCREASE COMPETITIVENESS - A STUDY OF INNOVATIVE PRACTICES IN IMPLEMENTATION OF CRM

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Mr. Srinivas. G**

Abstract : In recent years, organisations have begun to realize the importance of knowing their customers better. Customer relationship management (CRM) is an approach to managing customer related knowledge of increasing strategic significance. The successful adoption of IT-enabled CRM redefines the traditional models of interaction between businesses and their customers, both nationally and globally using e-CRM.

This paper discusses the results of an exploratory survey conducted in the city of Bangalore on the best and innovative CRM practices, implemented by business organizations; it discusses CRM practice and expectations, the motives for implementing it, and evaluates post-implementation experiences. It also investigates the CRM tools functionality in the strategic, process, communication, and business-to-customer (B2C) organizational context and reports the extent of their use. The results show that only those organizations who have been innovative in their approach and those who have implemented their practices have been able to meet their CRM objective. It also gives a pointer to the emerging trends in CRM as we enter the second decade of the 21st century.

Our study highlights some of the best and innovative practices of CRM especially in branding, value addition, customer experience and personalisation using technology as a tool to reach the CRM goal of retaining customers among the selected automobile, retail and consumer electronics businesses in the Indian context. This is done by using convenience sampling and administering a questionnaire among them to find out the effect of the CRM initiatives of the 3 business sectors in India with specific reference to Bangalore. The findings highlight the positive and negative effects of the technology enabled e-CRM initiatives. The trends in innovations are identified in the framework of CRM to Customer Managed Relationships(CMR), CRM to Customer Value Relationships(CVR) and CRM to Customer Trust Relationships(CTR.)

Keywords : branding, value addition, customer experience, personalization, strategic significance.

Introduction : In response to the growing threat from conventional and non-traditional competitors, established manufacturing, trading and service

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organizations are using information technology and other quantitative and qualitative tools to get as close to the customer as possible. Customer relationship management (CRM) holds the promise to achieve such corporate objectives in this highly competitive arena. It involves the continuous use of refined information about current and potential customers in order to anticipate and respond to their needs and draws on a combination of business processes and IT to discover knowledge about the customers.

The philosophy of CRM is based on :

➤ Relationship orientation.

➤ Customer retention.

➤ Superior customer value created through process management.

IT is the enabling technology for the discovery and management of customer knowledge. CRM encompasses the management of all possible ways that an organization interacts with its customers. From receiving an order through the delivery of the products and services In its simplest form a CRM implementation may be a "Frequently Asked Questions," (FAQ) page on the company's Web site, a call-centre, an e-mail newsletter, or a customer application download facility .In its simplest form a CRM implementation may be a "Frequently Asked Questions," (FAQ) page on the company's Web site, a call-centre, an e-mail newsletter, or a customer application download facility. CRM implementations include internal systems, such as customer databases,

systems for interaction with consumers, such as home banking, as well as systems directed to business customers, such as order processing via B2B portals on the Internet. CRM is becoming a priority due to very powerful economic, technological, and social forces that have effectively made the traditional business models irrelevant in the contemporary business and technological environment; thus with the growth of e-business, customers are just a mouse-click away from competitors. Satisfied customers are less expensive and can become an effective advertisement channel. Customer retention provides additional revenue. It is argued that a 5% increase in customer retention can result in an 18% reduction in operating costs. Many organizations think their customer profitability follows a Pareto type 80/20 rule: i.e. 80% of a bank's revenues can be attributed to 20% of its customers.

Acquisition of new customers is five times more expensive than generating repeat business from existing customers. Most institutions are facing strong competition, not only from existing players within the industry, but also from new entrants from other business sectors.

Objectives

a) To study the technology enabled CRM initiatives of select companies

b) To identify the best CRM practices

c) To find out the customer satisfaction of the technology enabled CRM practices

Methodology

The study is based on an exploratory survey conducted in the city of Bangalore using a simple random sampling with a sample size of 180 respondants spread over three companies.

The questionnaire was annalysed and percentage values were calculated regarding satisfaction and dissatisfaction.

A large sample test at five percent level of significance was administered to understand whether the level of satisfied consumers and highly satisfied consumers differed significantly.

The results showed that in all the three companies the proportion of highly satisfied customers was significantly greater than the merely satisfied customers.

3. Research on best practices

The authors of this paper went through the CRM initiatives of several organizations and have identified certain best practices which stand out in an economy which is still recovering from the shock of the last few years. These best practices have been divided into three main headings and each best practice has been substantiated with an example to get a better understanding of the same.

CRM Best Practices-1-From CRM to CMR

Most companies are implementing systems that let their customer service people, salespeople, technical support people, marketing people, and sometimes accounting and order management people see a combined, 360-degree view of each customer's interactions with the firm. Instead, what if a firm designed and implemented an information system that lets the customer gain a 360-degree view of the interactions that take place within the firm that impact him? This is what some firms are doing as a best practice, they are designing their CRM systems from the outside in rather from the inside out and this definitely is a best practice. Customer relationship management systems whether straight CRM (client-server heritage) or the newer e-CRM (Internet-based) variety have typically been designed from the inside out What if the company began instead by designing a customer relationship management system that lets Customers Manage their Relationships (CMR) with the company? The company takes all the information it has about customers' current relationships with it and makes this information easily accessible to the customers themselves through the Web.

This initiative was taken by Big Bazaar and its web initiative Future Bazaar in which customers using the services of E-ordering in the future bazaar web page could choose their own loyalty programme, the website allowed the user to track not only their order but their own buying pattern and decide which type of customer they considered themselves to be. The programme also allowed customers to choose their own preferred premium points at their birthday or anniversary, their own choice of gifts and

also their own loyalty grade. This initiative helped the future bazaar to become the largest supplier of goods through web marketing in 2010.

Future Bazaar was asked few relevant questions (Annexure 1) related to their customer relationships activities and the findings were as follows. They had information readily available to address their customer's queries. The customers were given information quickly and effectively. Approximately 1,500 customers register with future bazaar daily and almost 2000 customers make purchases daily. The company stated that their door deliveries to customers' purchases were always on time. However, nationally only about 300 complaints were recorded from customers annually. It is inferred that the company is positive about conducting online B2C transactions and would continue to have a web presence.

A short questionnaire was designed to address the customers and the findings were as follows:

75% of the respondents were males and 25% females of whom 65% were in the age group of 18 to 30 years. 25% were in the range of 30 – 40 and 10% were in the range of 40 -50 and 5% above 50 years. All the respondents had registered with the online web site - future bazaar.

10% of respondents stated that they always make purchases from Future Bazaar while 90% respondents purchase online only sometimes. While they did the transactions 95% were highly satisfied with the products and prices offered by Future Bazaar while 5% were only satisfied.

However after administering the large sample test of proportion it was concluded that the percentage of highly satisfied customers was significantly more than the percentage of only satisfied customers.

Customers satisfaction relating to price and product

- Highly satisfied
- Satisfied
- Somewhat satisfied
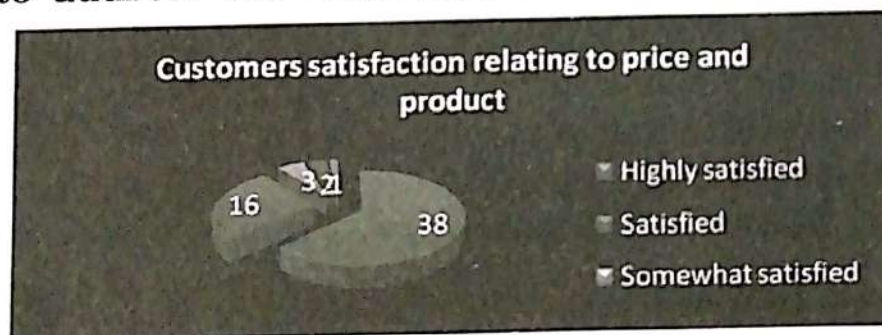
Most the respondents were highly satisfied with the door deliveries and mentioned they would recommend to others to buy online from Future Bazaar.

Customer satisfaction with door deliveries of product

	Highly satisfied	Satisfied	Somewhat satisfied	Not satisfied	Undecided
Series1	42	10	8	0	0
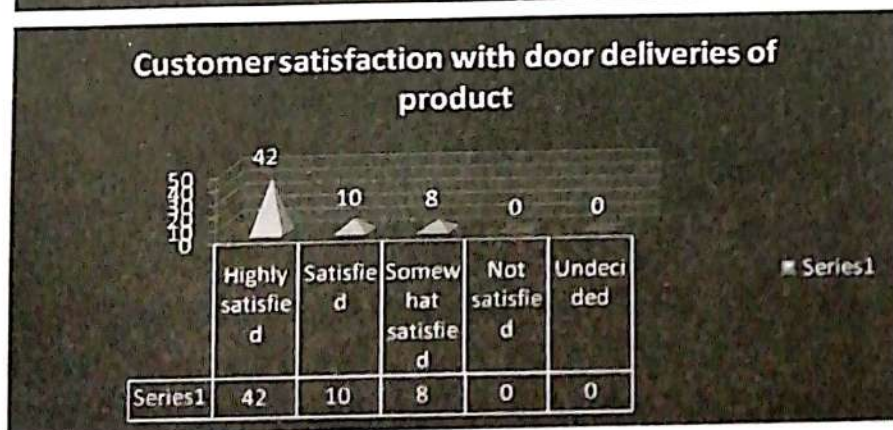
It inferred from the findings that the company has high potential for attracting customers to their online B2C marketing model to conduct business.

CRM Best Practices -2- From CRM to CVR

Every customer wants a relation with the company that not only manifests in loyalty points or bonus gifts but relations that add value to his overall experience as a customer of the brand. These experiences which collectively enhance the value of the brand and the image of the company and also bring the customer into the sharp focus of the relationship cycle are called as Customer Value Relationships (CVR).

The case in point is the good life CRM initiative by Hero Honda Motors now Hero Motor Corp which launched a Customer Relationship Program in the year 2001. The program was completely managed manually and was difficult to manage and there were always challenges in ensuring authenticity of the data. This led to upgrading of the manual processes in the Passport program to an electronic platform called GOODLIFE wherein a smart card is issued to the customers. The new system began in January, 2009 and in a short span of 9 months the program was rolled out to almost 2000 touch-points of Hero Honda now Hero Motor Corp, covering all dealers and SSPs and around 4000 dealer staff were given hands on training. With the introduction of a software and online process (right from online form filling to redemption of gifts) there is complete authenticity of information captured and retrieved. The use of technology has increased management efficiency of the CRM program by providing real time information of the customers. Authenticity of information is no more questionable, the processing time has reduced from approximately three months to five days. Status of points and gifts redemption is visible to dealers as well as customers. Dealers' overhead costs have reduced because of a completely paper-less process also dealers now have access to lot more analytics to help them do undertake target marketing.

There are 5 strong dealers of **Hero Motor Cycles** in Bangalore namely Prakash Motors, Majestic Motors, Millennium Motors, Sai Motors, and Niki Motors. All of them have sub-dealers and the network sells around 5,500 two wheelers per month in Bangalore. Majority mentioned that their overall services on paid mode is less than the free services in the ratio of 40% and 60% respectively from a total inflow of 1500-2000 customers per month per dealer.

Relevant questions were addressed to the dealers and the findings were as follows:

All the dealers agreed that they had information readily available to address customer's problems and they generally take less than 5 minutes to answer to customers queries in personal visits on phone. The dealers responded that 90% of the customers visit the dealers for repeat services either on similar faults of the bike or with varied faults. It seems only 10% divert to their convenience of the home or office.

In all about 350-400 customers swipe the 'Good life' card per month in order to gain the points given by Hero Motor Corp and redeem them for gifts, discounts for services and parts. The card entails discount at select retail outlets for purchases of consumer goods and an accident life insurance for Rs.1 lakh within 3 years further, the customer need to renew it himself. The dealers mentioned that all were highly satisfied with the 'Goodlife' program which was otherwise known as the Passport program.

It is inferred that this promotional mode of offering customer and his vehicle ID on plastic cards gives an identification to the customer and the vehicle which enable him to be reckoned anywhere in India. Beyond that the entire history of the transactions made with various outlets are recorded and printed on request. This scheme has attracted all new customers and the usage is very high that sometimes there is a delay in stocking the gifts for points redeeming. However, the new customers are now put in a queue for availing the 'Goodlife' card.

The customers of Hero Motor Corp two wheelers were asked questions on their usage of the card. It was found from the all respondents in the age group of 18 to 45 that they possess the 'Goodlife' cards. They all used the card regularly and all of them strongly agreed that they benefit from the 'Goodlife' program. All the respondents were highly satisfied with the program as the concept of waiting at the mechanic shop has become a history. Today customers value their time and

Hero Motors has risen to match customer expectations by building long term relations using technology to enable quick and prompt services. All the respondents mentioned that they would recommend others to buy a Hero Honda because of the 'Goodlife program' as well.

All the answers were statistically tested and the level of highly satisfied customers was significantly more than those who were only satisfied.

It is inferred from the above findings that Hero Motors Customers value such Customer Relationship programs that motivate them and it drives them towards customer loyalty.

CRM Best Practices -3-From CRM to CTR

If there is one aspect of customer satisfaction and delight that binds the customer to the organization, it is the trust that the company enjoys with the customer. The customer expects the same quality and performance from the product and service again and again and this adds to a bond of trust between the firm and its customer. The CRM initiative must move from merely handling relationship to maintaining trust. This is called as Customer Trust Relationship (CTR). If the brand can handle relationships with its customers in a manner to foster more trust then the chances of the organization succeeding is very high.

The case in point is **DELL**. Dell recovered from the 2005 Dell Hell crisis by recommitting themselves to engaging

with their customers in meaningful ways. Since 2005, Dell has re-focused its efforts on supporting Dell customers on Dell Support Forum; built the Direct2Dell blog into one of the most respected corporate blogs in the world; involved customers and employees in product and process innovation on Idea storm and Employee Storm; created communities of interest around big social objects on Dell Digital Nomad, Dell Take Your Own Path and Dell Go Green; and even used social networks for commerce, especially on Dell Outlets on Twitter. While the Dell social media platforms are often cited as industry case studies, most people do not know about Dell's strong social CRM program where it works with Radian 6 to categorize social media conversations into problems (that need to be fixed), ideas (that need to be built upon) and praise (that needs to be encouraged) and escalate it to internal business unit and country teams to respond to them in real time. Most people also do not see that Dell's social media programs are supported by a strong governance system, with a dedicated social media team at the center of its hub and spoke structure, well-defined internal workflows and stakeholder roles (including the role of agencies), and well-articulated and public social media policies for its employees and community policies for the participants on its community platforms.

Similar to the above two, a survey was done with DELL and its customers. It was found from the survey with the company that they did have information readily available to address customer queries. The customers were given required information quickly and effectively.
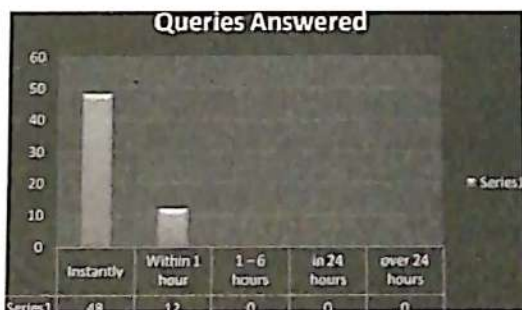
The queries were answered based on the question and 80% are answered instantly while 20% were answered within 1 hour but not beyond 24 hours.
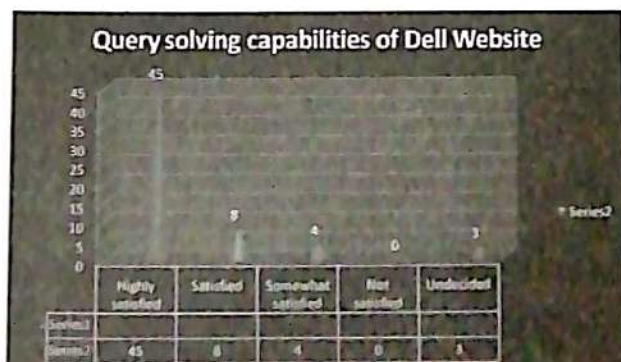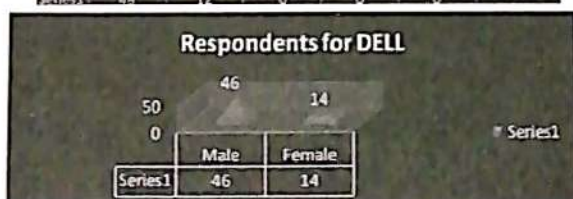
75% of the respondents were highly satisfied with the user friendly links of Dell web pages to answer to customer queries. 13% were only satisfied and 7% somewhat satisfied and 5% had not decided.

Satisfaction with the service of toll free number

	Highly satisfied	Satisfied	Somewhat satisfied	Not satisfied	Undecided
Series1					
Series2	52	6	0	0	2
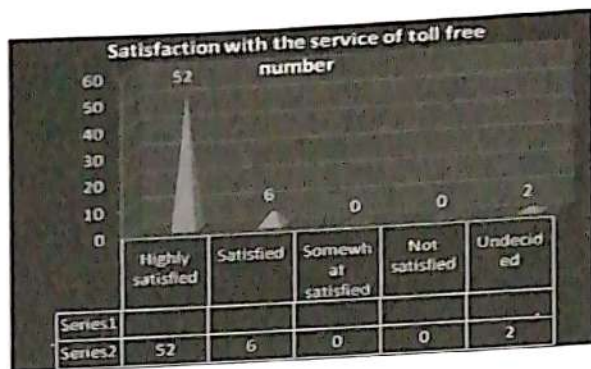
The response on the toll free number for solutions was very good as 86% were highly satisfied and 10% satisfied while 4% were undecided to comment on their experience.

Visit to Dell for query

- Always 34
- Sometimes 24
- Rarely 2
- Very rarely 0
- Never 0
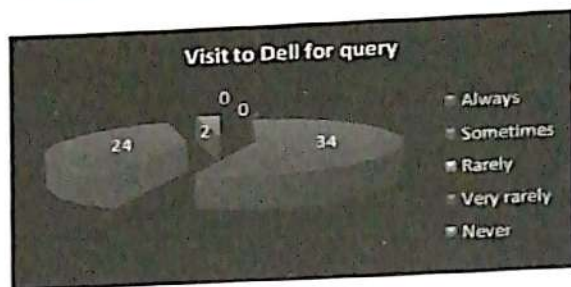
It is also found that 56% of the respondents always visit the Dell site whenever they have a query and 40% visit sometimes and only 4% rarely visit the dell site for solutions.

Usage of toll free number for query solution

- Always 54
- Sometimes 6
- Rarely 0
- Very rarely 0
- Never 0
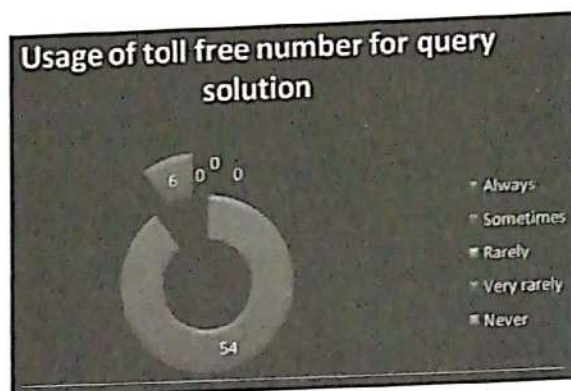
It is found that 90% of the respondents used the toll free number to call Dell when they had a problem and 10% called sometimes.

Thus, it is inferred that Dell users prefer to call than use the web site but there is a substantial interest in getting solutions from the web itself rather than from the toll free calls. It is clear from the customer survey that Indians are in the move to get answers for queries from the 'SELF HELP MODEL' than the 'PLEASE HELP ME MODEL' with the help of technology.

Age Group

	18–30	30–40	40–50	Above 50
Series1	40	10	5	5
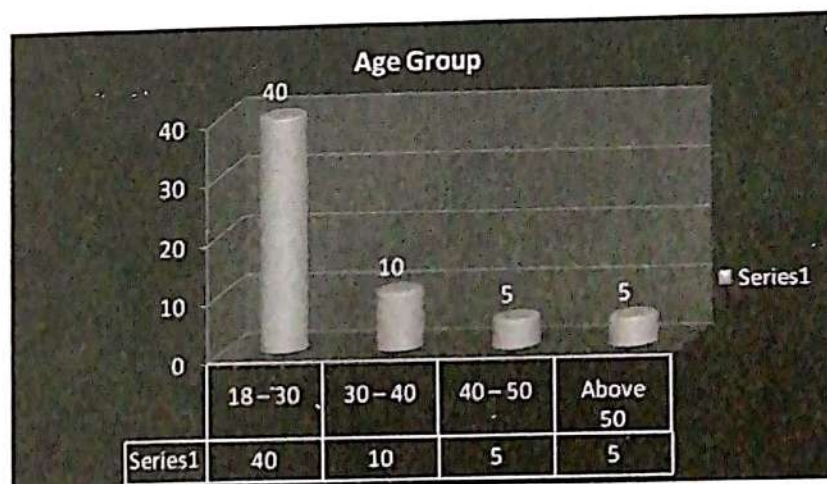
When asked about the frequency of calls, it was gathered that about 100 calls are answered from local customers in Bangalore daily. The daily hit rate of the Dell web site in India is about 20,000 hits including blogs.

It is inferred that DELL is making an attempt to create dramatic change in customer behavior in India. Indians are always habituated to get things done from others; DELL is making the customers service themselves with help of technology.

Thus, it is inferred that Dell users prefer to call than use the web site but there is a substantial interest in getting solutions from the web itself rather than from the toll free calls. It is clear from the customer survey that Indians are in the move to get answers for queries from the 'SELF HELP MODEL' than the 'PLEASE HELP ME MODEL' with the help of technology.

Conclusion

The findings highlight the positive and negative effects of the technology enabled e-CRM initiatives. The trends in innovations framed in the framework of CRM to Customer Managed Relationships (CMR), CRM to Customer Value Relationships (CVR) and CRM to Customer Trust Relationships (CTR.) are validated with three distinguished companies and their customers in Bangalore. It is concluded that the customers in cities like Bangalore in India have begun to be highly responsive to technology based self services than the

traditional people delegated services and the SELF HELP MODEL would be effective with the Indian urban consumers who are driven by time management.

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CONSUMERS' PURCHASING PATTERN AMONG RURAL MIDDLE CLASS AND RURAL RICH CLASS : A COMPARATIVE STUDY ON FARM MECHANIZATION

Dr. B. Vijayalakshmi*
K. Tirumalaiah**

Abstract : *In the context of globalization and also increasing commercialization of agriculture, mechanization is very important. There has been an increase in the use of farm machinery in Indian Agriculture as it contributed to the increase in output due to timeliness of operations and increasing precision in input application. Most of the mechanical inputs have displaced human and bullock labour, which is socially unjustified. Some states like Punjab, Haryana excelled in farm mechanization, but have experienced it as overinvestment. There cannot be going back from mechanization but we frame suitable policies such as liberalizing land lease market, encouraging cooperative management and custom hiring of machinery, imparting training to the farmers regarding such investment, encouraging standard service inputs, devising machinery problem from small farmers and dry land cultivation.*

Several studies have indicated that there was significant increase in cropping intensity due to the use of tractors and irrigation as a consequence of mechanization. India is a predominantly an agricultural economy with 60- 65 % of her population living in villages and earn their livelihood through agriculture and allied activities. Rural population of India was 91% in 1901(Table 2) and may reach to 50% by 2020. Population: Population of India by 2011-12 is estimated to be 1221.91 million with the annual compound growth rate of 1.80 per cent. Rural people migrate to urban areas for employment and better amenities as such opportunities are not adequately available in rural areas. However, these could be created through selective mechanization of agriculture and appropriate postharvest processing and value addition to the produce in the production catchment. To keep pace with India is a predominantly an agricultural economy with 60- 65 % of her population living in villages

Keywords : *Rural Marketing, Farm Mechanization, Agriculture, Purchase Intention.*

Introduction : Rural marketing in India is seen by many as a huge growth opportunity, considering that about 70 % of India's population lives in 630000 villages in rural areas (according to 2001 census). With such a large number of potential consumers, it is clear why national and multinational corporations would like to successfully penetrate the rural Indian market. A location is defined as rural if at least 75 percent of the population is agrarian. The Indian

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rural market with its vast size and demand base offers great opportunities to marketers. Two-thirds of countries consumers live in rural areas and almost half of the national income is generated here. It is only natural that rural markets form an important part of the total market of India.

According to the NCAER study, there are almost twice as many 'lower middle income' households in rural areas as in the urban areas. At the highest income level there are 2.3 million urban households as against 1.6 million households in rural areas. Middle and high-income households in rural India are expected to grow from 80 million to 111 million by 2009. In urban India, the same is expected to grow from 46 million to 59 million. Thus, the absolute size of rural India is expected to be double that of urban India.

(Rs. In Crore)

Year	2006-07	2007-08	2008-09	2009-10	2010-11
GDP of Agriculture & Allied Sector	619160	655080	654118	656975	692499
Per cent to Total	17.4	16.8	15.7	14.6	14

Source: Central Statistical Organization, Ministry of Statistics and Programme implementation, Govt. of India

Agriculture is one of the strongholds of the Indian economy and accounts for 14 per cent of the country's gross domestic product (GDP) in 2010-11 and 10.23 per cent (provisional) of the total exports. Furthermore, the sector provided employment to 58.2 per cent of the work force. The Indian Agricultural Scenario reveals that the total geographical area of India is 328.7 million hectares of which 140.3 million hectares is net sown area,

while 193.7 million hectares is the gross cropped area, according to the Annual Report 2009-10 of the Ministry of Agriculture.

Agriculture and Farm Mechanization

Agriculture mechanization has experienced a tremendous growth over the last few years. Due to widespread modernization visible in the agricultural sector, farming communities have started employing agro- equipments extensively in various domains of cultivation like tillage, sowing, irrigation, plant protection, threshing etc. The awareness among farming communities to implement the latest available technologies in farming has resulted in a shift towards mechanization, extending the scope of agri-machinery in the nation

However, the country suffers from low levels of farm mechanization, which stems from numerous impediments, both at consumer preference and operational level. The researcher made an attempt to identify the factors influencing rural consumer behavior towards purchasing and deliberate on resolving issues inhabiting the growth of farm mechanization, measures needed to meet these challenges and roles the various stakeholders have therein. Further the overall Indian Farm Equipment Market is on a growth phase, the reasons behind the revival include easy availability of finance schemes and reduction in interest rates. The Government focuses on building and

improving infrastructure also had a positive effect on the overall performance of the farm equipment sector. The agricultural equipment Market driven by several factors and their impact on the agricultural equipment industry are furnished below.

Factors	Impact on agricultural equipment industry
Improved availability of credit	⇧
Emergence of contract farming and dedicated sourcing with corporate partnership	⇧
Opportunity for employment in urban areas pressuring agricultural wages upwards	⇧
Increased competition driven by WTO norms	⇔

Introduction to Farm Mechanization Industry in India

Agricultural Equipment industry plays a key role in supporting the performance of the agricultural sector in India. However the farm equipment sector in India is nascent, but a fast growing one, that is set to experience sustained growth due to increased mechanization of farming, easy availability of credit and emerging practices, such as contract farming and also farming activities are increasingly getting mechanized, and the availability, quality and performance of agricultural equipment has an increasing impact on improving the output and productivity of the agricultural sector.

Status of Farm Mechanization:

➤ Even though farm mechanization shows an increasing trend, there are wide ranging disparities in the levels of mechanization across states.

➤ Northern States such as Punjab, Haryana, Uttar Pradesh (particularly Western and Tarai belt) have achieved a faster growth in mechanization over various Plans.

➤ The sale of other implements and machines like combine harvesters, threshers and other power-operated equipment have been increasing almost throughout the country.

➤ The pace of mechanization in North-Eastern States has not been satisfactory due to constraints such as hilly topography, socio-economic conditions, high cost of transport, and lack of institutional financing and lack of farm machinery manufacturing industries.

➤ Mechanization in Western and Southern states of the country viz., Gujarat, Maharashtra, Rajasthan and certain areas of Tamil Nadu, Andhra Pradesh etc., has increased with the increase in area under irrigation and also with the growing awareness among farmers.

Policy on Farm Mechanization:

There is no separate National Policy on Agricultural Mechanization. However, this aspect is covered under the agriculture policy of the National government which promotes agricultural mechanization with the following goals in mind:

- ➤ Agricultural mechanization should lead to a sustainable increase in yields and cropping intensity with the objective of meeting the planned growth rate in agricultural production and maintaining it.

- ➤ The income of agricultural workers should rise at a satisfactory rate so that the disparity between urban and rural incomes is contained and they get opportunity to lead a dignified life.

- ➤ The benefits of agricultural mechanization should apply to all types of farmers including small and marginal ones in different regions of the country, particularly rain fed areas.

- ➤ Agricultural mechanization should create a worker friendly environment especially for women workers by lessening hard labour, health hazards and improve safety in production operations.

- ➤ Agricultural mechanization should lead to a reduced cost of production agricultural thereby increase the income of farmers and impart a price advantage while competing for export contracts in the international market.

However governmental policy has important influence on farmers' purchase intention. Where more support policies from government, the more positive farmers' purchase intention will be. If governments support farmers to buy and manage agricultural machinery,

and give subsidies on finance, then farmers' entry barriers of usage and purchase of agricultural machinery will reduce. When farmers' positivity is aroused, they certainly generate positive purchase intention.

The key agricultural equipment Market in India

India is the second largest manufacturer of tractors in the world. The Indian tractor industry closed fiscal year 2005 on a very positive note with 2,50,000 units registering a growth of over 30 % over previous year. The government's focus on the agricultural economy with increased real lending ensuring availability of cheap finance led to the growth. Tractor industry is categorized on the basis of power delivered by the engine Horse Power (hp). 30-40 hp tractors primarily used in southern and western region due to hard soil condition dominate Indian market. It is followed by range of 21-30 hp, which finds its market in soft soil conditions well irrigated northern state. The tractor industry comprises 14 players, including three MNCs and led by (MM) Mahindra & Mahindra Ltd, (TAFE) Tractors & Farm Equipment Ltd, and (PT) Punjab tractors Ltd.

Indian Agriculture Equipment Market

Source: FICCI
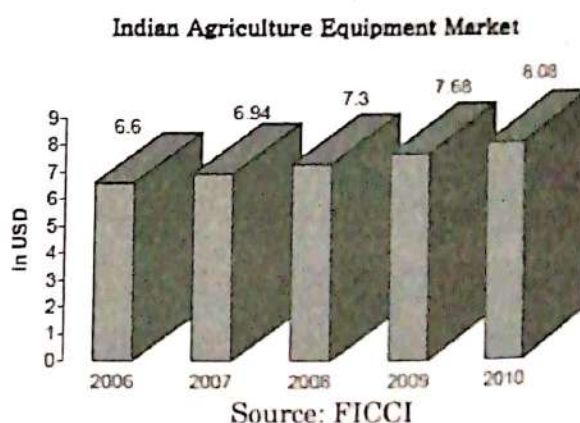
Objectives of the study

In view of this concept the objective of the study is to ascertain whether there is a significant difference between the high income rural customers and the middle income rural customers with regard to purchase farm mechanization through rating 1 Mostly unimportant, 2 unimportant, 3 neutral, 4 important and 5 highly important on motivating factors such as (4 Ps) Product, Price, Place and Promotion with respect to purchase decision on farm mechanization.

Research Methodology

Total Population	
Population above poverty line	37,35 lakhs
Urban	(3735.20-720.42)= 30.14
Rural population above poverty line	6.48
Middle income group ¾ th of 2351.35	23.51
High income group 1/4rh of 2351.35	17.63
	5.84

The above Table depicts the census data pertaining to Chittoor district of Andhra Pradesh, it is noted that the urban and rural population of the district constitutes a total population of 37 lakhs and from the total population of the district, the 400 sample size selected for the study. This sample size of 400 is split in the ratio of high income group and middle income group which is 1:3 ratios. The number of high income group respondents are 100 while the number of middle income group respondents are 300.

Hypothesis based on the survey

1. H1: There is no significant difference between rural middle income group and rural high income

Keeping the above objectives in view, stratified random samples of total 400 respondents were selected. These respondents were classified into two groups such as rural middle class and rural rich class, out of 400 respondents 300 were from rural middle class and 100 from rural rich class. The influencing factors of 4Ps (Product, Price, Place and Promotion) were studied on the purchase decision of rural consumer. For the analysis of data and test the hypothesis the z test statistical tool has been adopted.

group consumer regarding (4P's) **Product** factor in purchasing farm equipment.

2. H0: There is a significant difference between rural middle income group and rural high income group consumer regarding (4P's) **Product** factor in purchasing farm equipment.

3. H1: There is no significant difference between rural middle income group and rural high income group consumer regarding (4Ps) **Price** factor in purchasing farm equipment.

4. H0: There is a significant difference between rural middle income group and rural high income group

consumer regarding (4Ps) **Price** factor in purchasing farm equipment.

5. H1: There is no significant difference between rural middle income group and rural high income group consumer regarding (4Ps) **Place** factor in purchasing farm equipment.

6. H0: There is no significant difference between rural middle income group and rural high income group consumer regarding (4Ps) **Place** factor in purchasing farm equipment

7. H1: There is no significant difference between rural middle income group and rural high income group consumer regarding (4Ps) **Promotion** in purchasing farm equipment.

8. H0: There is no significant difference between rural middle income group and rural high income group consumer regarding (4Ps) **Promotion** in purchasing farm equipment.

Middle class respondents =300

Factor \ Rating	1	2	3	4	5	Total
Product	108	42	64	86	00	300
Price	60	39	66	93	42	300
Place	102	83	43	35	37	300
Promotion	84	26	36	117	37	300

Middle class respondents =100

Factor \ Rank	1	2	3	4	5	Total
Product	31	13	22	20	14	100
Price	20	13	22	31	14	100
Place	07	11	09	15	58	100
Promotion	22	20	22	33	03	100

Product attributes		
No. of responses		
Rating	Rural Middle income	Rural High income
1	108	31
2	42	13
3	64	22
4	86	20
5	00	14
Total	300	100

Rating	Middle income frequency			Rating	High income frequency		
x	f	f*x	variance	x	f	f*x	variance
1	108	108	219.8209	1	31	31	92.7799
2	42	84	7.645879	2	13	26	6.9277
3	64	192	21.03749	3	22	66	1.6038
4	86	344	212.8824	4	20	80	32.258
5	0	0	0	5	14	70	72.1406
Total	300	728	461.3867		100	273	205.71
	Mean1	2.426667			Mean2	2.73	
	variance1		1.537956		variance2		2.0571

Calculation of 'z' value $z = \dfrac{Abs(Mean1 - Mean2)}{\sqrt{\left[\dfrac{Var1}{300} + \dfrac{Var2}{100}\right]}}$

Z calculated value = 1.892233

Table value of z at 95% confidence = 1.96

The mean rating given by the respondents in the middle income group towards product attributes is 2.43 while that of the high income group is 2.73. The calculated value of Z test is 1.89, which is less than the table value 1.96. Hence we accept the null hypothesis that there is no significance difference between rural middle income group and rural high income group respondents towards rating product attributes.

Price attributes		
No. of responses		
Rating	Rural Middle income	Rural High income
1	114	20
2	44	13
3	60	22
4	48	31
5	34	14
Total	300	100

Rating	Middle income Frequency			Rating	High income Frequency		
x	f	f*x	variance	x	f	f*x	variance
1	114	114	232.0114	1	20	20	59.858
2	44	88	10.1376	2	13	26	6.9277
3	60	180	16.224	3	22	66	1.6038
4	48	192	110.8992	4	31	124	49.9999
5	34	170	215.9136	5	14	70	72.1406
Total	300	744	1845.12	total	100	306	190.53
	Mean1	2.48			Mean2	3.06	
	variance1		6.1504		variance2		1.9053

Calculation of 'z' value $z = \dfrac{Abs(Mean1 - Mean2)}{\sqrt{\left[\dfrac{Var\,1}{300} + \dfrac{Var\,2}{100}\right]}}$

Z calculated value=   3.667568773

Table value of z at 95% confidence =1.96

The mean rating given by the respondents in the middle income group towards product attributes is 2.48 while that of the high income group is 3.06. The calculated value of Z statistic is 3.667, which is more than the table value 1.96.

Hence we reject the null hypothesis that there is significance difference between rural middle income group and rural high income group respondents towards rating of product attribute.

	Place attributes	
	No. of responses	
Rating	Rural Middle income	Rural High income
1	102	7
2	83	11
3	43	9
4	35	15
5	37	58
Total	300	100

	Middle income				High income		
Rating	frequency			Rating	frequency		
x	f	f*x	variance	x	f	f*x	variance
1	102	102	201.8286	1	7	7	65.5452
2	83	166	13.72638	2	11	22	46.6796
3	43	129	15.13789	3	9	27	10.1124
4	35	140	88.85485	4	15	60	0.054
5	37	185	248.8389	5	58	290	51.2488
Total	300	722	568.3867	total	100	406	173.64
	Mean1	2.406667			Mean2	4.06	
	variance1		1.894622		variance2		1.7364

Calculation of 'Z' value $z = \dfrac{Abs(Mean1 - Mean2)}{\sqrt{\left[\dfrac{Var\,1}{300} + \dfrac{Var\,2}{100}\right]}}$

Z calculated value = 10.74422

Table value of z at 95% confidence =1.96

The mean rating given by the respondents in the middle income group towards product attributes is 2.40 while that of the high income group is 4.06. the calculated value of Z statistic is 10.74422, which is more than the table value 1.96. Hence we reject the null hypothesis that there is significance difference between rural middle income group and rural high income group respondents towards rating of product attributes.

Promotion attributes		
No. of responses		
Rating	Rural Middle income	Rural High income
1	84	22
2	26	20
3	36	22
4	117	33
5	37	3
Total	300	100

Middle income				High income			
Rating	frequency			Rating	frequency		
x	f	f*x	variance	x	f	f*x	variance
1	84	84	170.9718	1	22	22	65.8438
2	26	52	4.733163	2	20	40	10.658
3	36	108	11.83359	3	22	66	1.6038
4	117	468	289.6191	4	33	132	53.2257
5	37	185	245.0156	5	3	15	15.4587
Total	300	897	722.1732	total	100	275	146.79
	Mean1	2.99			Mean2	2.75	
	variance1		2.407244		variance2		1.4679

Calculation of 'Z' value $z = \dfrac{Abs(Mean1 - Mean2)}{\sqrt{\left[\dfrac{Var1}{300} + \dfrac{Var2}{100}\right]}}$

Z calculated value=   1.592825545

Table value of z at 95% confidence =1.96

The mean rating given by the respondents in the middle income group towards product attributes is 2.99 while that of the high income group is 2.75 the calculated value of Z statistic is 1.59, which is less than the table value 1.96.

Hence we accept the null hypothesis that there is no significance difference between rural middle income group and rural high income group respondents towards rating of product attribute.

Significance difference in overall scores between middle income and high income groups		Product	Price	Place	Promotion	Overall 4Ps
Middle Income Group	Mean	2.43	2.48	2.4	2.99	2.575
	Variance	1.53	6.15	1.89	2.4	2.9925
High Income Group	Mean	2.73	3.06	4.06	2.75	3.15
	Variance	2.05	1.9	1.73	1.46	1.785

Calculation of 'Z' value

$$Z = \frac{Abs(Mean1 - Mean2)}{\sqrt{\left[\dfrac{Var1}{300} + \dfrac{Var2}{100}\right]}}$$

Z calculated value = .3.447071234

Table value of z at 95% confidence = 1.96

As calculated value is more than table value, the null hypothesis is rejected. Hence there is a significant difference in the overall 4Ps scores of middle income and high income groups of rural consumers.

Conclusion

This paper studied farmers' purchase intention for agricultural machinery among rural middle class and rural rich class. Agricultural mechanization helps in increasing production, productivity and profitability in agriculture by achieving timeliness in farm operations, bringing precision in metering and placement of inputs, reducing available input losses, increasing utilization efficiency of costly inputs (seed, chemical, fertilizer, irrigation, water etc.), reducing unit cost of produce, enhancing profitability and competitiveness in the cost of operation. It can be concluded from the overall study that there is a significant difference between middle income group and rich income group while making purchase decision with regard to farm equipments.

The factors that mainly influencing farmers' purchase intentions are price and place which play a major role among rural middle class and rural rich class but the product and promotional factors are not significant while purchasing the farm mechanized equipment. For many families, buying agricultural machinery is a big household expenditure, so the purchase behavior is very discrete. The purchase decision is mainly based on their own evaluations, and others' opinion is not very important relatively. This shows farmers' purchase behavior is becoming mature and rational gradually. When farmers feel more convenient in purchasing and maintaining agricultural machinery, their purchase

intention will increase. So, the improvements of sales and service network are also helpful to positive intention.

Despite these results, on an individual basis the importance of these factors change from farmer to farmer. However, market is changing constantly, and farmers' purchase psychology is difficult to describe accurately, so this paper is merely a suggestive template on farmers' purchase intention research. A survey based on wider samples and other theories will be necessary.

Moreover the awareness among farming communities to implement the latest available technologies in farming has resulted in a shift towards mechanization, agricultural machinery corporations conduct many training and guidance activities to increase their competitiveness in the market. This rise hopes in extending the scope of agri-machinery in the nation.

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TALENT ACQUISITION A MEANS TO TEMPORARY STAFFING

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Abstract : The staffing companies nowadays are specialized in fields such as health care, information technology, administrative and secretariat, management engineering and research. Staffing Companies assure full responsibility for their services and in order to assure the highest quality of the consultancy provided to their customers. Talent Acquisition is the greatest challenge faced by staffing companies to meet the growing demand of their clients. The process of attracting, finding and selecting highly talented individuals those who align with the business strategy, possess required competencies, and who will integrate smoothly and productively into the organization and its culture to meet current and future employment needs is definitely not an easy task. The Talent Acquisition practices adopted by the companies are not very effective in most of the cases to acquire the talents across the board in the organization. In order to understand more regarding temporary staffing, a case study on Talent Acquisition in Opterna, with reference to temporary staffing was taken up in Bangalore unit.

Findings corroborate that Opterna can conduct training for potential employees and strengthen its relation with its client companies to understand its client's requirements. A clear understanding of the labour market and communicating it to the client regarding the time required to get candidates with expected skill sets will help in long term relations. It is also important for the company to understand and fulfill individual requirements so as to increase the talent attraction and retention. Understanding the gap between what the companies provide its employees and what the employees expect and meeting employees expectations definitely help in reducing the attrition rate. A well developed staffing industry that offers an organized and transparent work arrangement will certainly enhance employment opportunities for workers. Since temporary staffing is expected to grow exponentially in the country, it is necessary for outsourcing partners to be equipped with vertical and functional specializations, with key differentiators customized to the Indian employment scenario.

Keywords : Banking, Technology, Services, Satisfaction

Introduction : In the last few years, the staffing industry has acted as one of the major elements in the economical development of the countries worldwide.

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Some could even say it has turned into a trend and is acting as the leading agent of the social and political phenomenon called globalization. While in the early 1970s the industry was only really visible in the US and European markets of the UK, France and the Netherlands, the industry has now become truly global. Consolidation of the industry in its core markets of North America and Western Europe has been accompanied by substantial growth in the remainder of Western Europe and most recently in the emerging markets of the Eastern Europe, Latin America and East Asia. At the global level, the industry is heavily concentrated with an elite group of American and to a lesser extent Western European, agencies dominating international investment in the sector.

Staffing Companies assure full responsibility for their services and in order to assure the highest quality of the consultancy provided to their customers, they had to specialize. This is how, nowadays there are staffing companies specialized in fields such as health care, information technology, administrative and secretariat, management, engineering and research. Talent Acquisition is the process of attracting, finding and selecting highly talented individuals those who align with the business strategy, possess required competencies, and who will integrate smoothly and productively into the organization and its culture to meet current and future employment needs.

Considering the current scenario of acute shortage of skilled employees, a company needs to work on its recruitment strategy beginning with the creation of a compelling employee value proposition, (EVP) which makes organization a magnet for talent. An organization determined by its market size and ranking, its products and services and its respect in market when provides its people with work life balance, recognition and good work culture with career growth opportunity and personal development is bound to have an competitive edge of acquiring talented people.

The way company manage its talent has changed with two fast moving trends. First, a staggering number of people who work for organization are no longer traditional employees of those organizations and secondly, a growing number of businesses have outsourced its employee relations. There has been a rise in temporary employees, those working on temporary agency payroll on the client site (Doussard and Theodore, 2006). Local workforce authorities in liberal market states are increasingly charged with mitigating long-term unemployment rooted in macroeconomic forces beyond their immediate control. In the US, and now elsewhere, these authorities have begun to establish partnerships with the temporary staffing industry as a means of extending their limited resources and improving job placement outcomes. Such partnerships are especially prominent in the US, where the Department of Labor has sanctioned policy experiments between local workforce authorities and

the temporary staffing industry.

In order to understand more regarding temporary staffing, a case study on Talent Acquisition in Opterna, with reference to temporary staffing was taken up in Bangalore unit. The survey of related literature becomes imperative to understand the previous research work carried out by various researchers in the field of temporary staffing and their relationship with their clients and temporary employees.

Temporary staffing a concise literature

An insight into the available literature in the field throws light on improving talent acquisition process by temporary staffing companies.

Lyons, (1971), mentions that Employee's turnover intention for the client organization is more likely due to the attitude toward the client organization than the attitude toward the temporary agency. That is, a temporary employee who is trying to quit a client is more likely to quit because the employee is dissatisfied with the aspects associated with the client in the form of support or supervision at client site than with aspects associated with the temporary agency in the form of pay or support from supervisors at the temporary agency. Temporary agencies for their part should make sure that temporary workers receive fair pay and benefits and try to assign them to client sites that provide favorable working conditions.

Dutton, Dukerich, Harquail, (1994), state that the employee can identify himself/herself with more than one organization and can exhibit attitudes such as satisfaction and organizational commitment for both of the organizations. Thus, temporary employees may reciprocate the support they receive from either one or both of the two organizations by showing favorable attitudes for both the temporary agency and the client organization

Cunningham, Cara, (2000), emphasize that it is important to develop the human resources to unleash the true potential of employees in the organization. The HR department has to play a role of promoting individual's all round development and learn from other organizations benefit programs continuously keeping themselves updated to ensure organization doesn't end up selling itself as a training ground to potential employers only to realize they learn and leave for joining competitors.

Drucker (2002), states in his article that the temp industry began around 50 years with Adecco supplying low level clerks to take the place of ledger keepers, receptionists, telephone operators, stenographers or the ladies in the typing pool who were sick or on vacation. They state that in the present times temp employees are hired for all kind of jobs even for the position of CEO. Companies requiring temp employees for instance may be provided with supply manufacturing managers capable of leading new plants from their inception until the facilities are in full production

or providing with health care professionals such as the nurse anesthesiologists. According to the author, organization works without manager performing the functions of hiring, promotion or firing but rather by outsourcing these functions. The Vendor sees to it that his candidates are performing well so as to continue with client contract, normally taking decisions related to such candidates after discussing with company manager. He concludes saying that the temp agencies claim to be selling productivity but it's hard to see how they can deliver.

Peck and Nikolas, (2002) developed a conceptualization of the role of the temporary staffing industry (TSI) in the wider economy, with particular reference to the 'home' of temping, the USA. It is suggested that the TSI should be understood as an active agent of labor-market deregulation and restructuring, contrary to the industry's self representation as a neutral mediator in the job market and as a mere facilitator of more efficient and flexible employment systems. The article draws attention to the active steps that the industry has taken to establish (and defend) the legally ambiguous 'triangular' employment relationship upon which its very viability depends and, more generally, to make and grow its markets in segments as diverse as light assembly and construction work, health care, accountancy, teaching and a range of clerical occupations.

Gossett, (2006), stated that temporary workers are part of the quickly expanding and maturing contingent labor industry. Through observations of industry practice and worker self-reports, this study illustrates some of the control and identification challenges created by this particular work arrangement. Temporary workers receive directives from both their staffing agency and the clients that contract for their labor. Sometimes these messages are contradictory and force temps to choose between the interests of the two organizations. This study argues that the coexistence of multiple management systems results in the creation of a loose net of organizational control, which both enables and constrains the actions of temporary workers.

Boyce, et. al (2007), stated that as organizations seek to increase flexibility and reduce costs, temporary work arrangements is increased. In this article, the authors argue that these workers can be the target of devalued treatment. They develop a model of the individual and organizational antecedents and consequences of temporary worker stigmatization. Then, they articulate the implications of this model for research on workplace stigma and effective utilization of temporary workers.

By analyzing the literature in the area of temporary staffing, there exists a wide gap in the micro study on temporary staffing, where not many studies have been conducted. Taking this aspect into consideration the study on, **Talent Acquisition a means to Temporary**

Staffing' was taken up in Opterna.

Brief background of the company Opterna and a work flow of temporary staffing

Opterna is a US based Opto-electronic global product company established in 1992. It is a software service wing of Nest Group, a CMMi Level 5 company. The Company is vertically integrated from active and passive components to value added modular versions and proficient in subsystem integration. It has strong technical base and impetus on quality, reliability and support with a pool of highly qualified professionals in opto-electronics and other related areas. Besides offering a plethora of products Opterna's growth strategy is focused on design and development of products and technology in various segments. Opterna's top management officials have held senior positions in Fortune 100 companies. Opterna has diversified itself with its focus on industry and Services. In Services, Opterna is in to Manufacturing, System Integration, Products and Technologies, Software Engineering and IT Consulting Services. Its services cater to the needs of healthcare, communications, Industrial, Automotive and Aerospace Sectors. Opterna is also into Temporary Staffing Business. In the Bangalore office clients' staff requirements are satisfied by employing the right candidate in company payroll to work on the site of the client. Numbers of valuable clients depend on Opterna for providing specialized technical employees to work for their projects. As the projects end, the temp employee is transferred to other projects depending on the availability and requirement of projects of the same clients or other clients.

Opterna operates globally with network spread across in America, Europe, Asia, Middle East and Africa. Its currently having its market coverage in 13 countries with its headquarter in the technology corridor of the Washington DC metropolitan region. It is fully equipped with world class manufacturing facilities with sales and support offices in Europe, Asia-Pacific, Middle East and Mexico. Opterna's network is spread across India, US, Mexico, UK, Ireland, France, Sweden, Germany, China, Singapore, UAE, Japan and Australia. Opterna works in partnership with Sanetronic Company Limited in Asia Pacific, Telefo in Europe and Ogmentum, Pacific Component Xchange in America.

The cycle of temporary staffing begins with the Business Development Manager (BDM) attracting the clients of diversified fields. The clients contact BDM and the human resource team that works on understanding the client requirements. This is the most important stage, without which further events cannot unfurl. After understanding the client requirements, the Resource management team begins working on sourcing candidates, matching the profile via portals and other sources. Candidates are given brief introduction regarding the company, their job responsibilities, and all the terms and conditions regarding their

workplace, joining date, pay scale once their profile is screened. The communication is either through e-mails or telephonic conversation. The screened candidate's profile is sent to the client organization's technical panel for further consideration. If they are convinced about the candidate, then an interview is scheduled between the candidate and the client organization, face to face or web conferencing as required. Candidates clearing the interview are finalized and the deal is closed by providing the offer letter confirming the joining date and the pay. At the month end, candidate details regarding attendance, performance are collected from the client and given to accounts department for payroll processing. When the project is ready for release, alternate project is searched for the candidate with same client or other clients to continue with cycle, failing which candidate is given a one month notice period alternately to choose to resign from company. Opterna's talent acquisition department has been working on increasing its presence and market share in the staffing department. Considering the fact that the department hires candidates with technical background on skill sets of embedded, telecom and programming languages it is working on increasing the number of clients requiring manpower on similar domains. The Company is also planning to expand on its recruitment tools considering the cost and benefits involved with available options. The increasing competition with more and more consultancies and companies that are entering the field, company has kept the option open of entering into other staffing departments and markets.

Statement of the problem

The Talent Acquisition practices adopted by the companies are not very effective in most of the cases to acquire the talents across the boards in the organization. Considering the fact that organizations are turning very competitive especially in terms of acquiring talent, this study is undertaken to highlight the rising importance of Talent Acquisition, the strategies followed and improving it to minimize the temporary employee attrition rate in Opterna.

Objectives of the study

- To assess the various techniques and procedures followed at Opterna for talent acquisition.

- To find out the effectiveness of these strategies.

- To identify the employee job expectations.

- Suggesting measures to reduce the temporary employee attrition rate.

Scope of the Study

The study is confined to the recruiters in talent acquisition department, the temporary employees and the managers of Client Company supervising the temporary employees. Thus the Study will help in understanding the labour market scenario particularly engineers in field of embedded system, mobile technology, programming and testing. The study is done on talent acquisition of

temporary employees of Opterna Technologies during the time period of December to February. 2010. Considering the active period after recession, there were lot of job openings and job hopping; as a result study was confined to the then current employees present in company during the research duration. The total workforce consisted of 49 recruiters of talent acquisition department working in Opterna Bangalore unit, its 73 temporary employees working in client site and the 37 client site managers supervising these employees. The researchers wanted to choose the entire population of workforce for conducting the survey; however, the respondents were not available for response due to their posting outside India. The parameter of interest in a research study was kept in view while deciding on the size of the sample. The Sample size for this research problem consists of the responding 43 recruiters, 61 temporary employees and the 33 managers which makes the sampling frame above 80 percent of the population size in all the three cases. Sampling frame was closely related to the population.

Research Methodology

Research design is a framework or blueprint for conducting any research project. It specifies the details of the procedures necessary for obtaining the information needed to and/or solve research problems. The type of research design is descriptive as well as exploratory in nature. It is concerned with describing the characteristics of a particular individual or of a group which is appropriate design methodology for this study (Malhotra, 2004). The study was also an attempt to identify the problems faced by recruiters, Opterna in particular and the effect of various factors like work atmosphere, job aspects influencing talent attraction and retention of temporary employees. Data was collected through questionnaire observation and series of observations were drawn by applying percentage analysis.

Discussion

The recruitment time as well as the recruitment tools plays an important role in understanding the efficiency and effectiveness of temporary staffing. The talent is acquired through various sources and some sources play a dominant role over other sources as the powerful tool of talent acquisition. Doussard and Theodore, (2006) have rightly stated that the organizations use those tools that are cost effective and more efficient. The following findings do relate to the fact that for Opterna Naukari.com was the most cost effective and faster in terms of acquiring the talents for different verticals.

1. **Time to Recruit :** The study attempted to understand the recruitment time required by Recruiters using various recruitment tools which are depicted in table 1.1. Table 1.1: Frequency distribution depicting recruitment time Vs. the Recruitment tools used by Opterna Recruiters.

Recruitment Tools	Scale	Readily Available	Within day	Within week	Within 15 days	Within month
Advertisement	Always	0	0	0	0	0
	Sometimes	0	0	0	0	0
	Usually	0	0	0	0	1
	Rarely	0	3	9	9	1
	Never	0	3	10	4	3
Referrals	Always	0	1	2	1	3
	Sometimes	0	0	2	4	0
	Usually	0	1	7	7	2
	Rarely	0	1	7	1	0
	Never	0	3	1	0	0
Head Hunting	Always	0	0	0	0	0
	Sometimes	0	0	0	0	0
	Usually	0	0	0	0	0
	Rarely	0	0	4	7	2
	Never	0	6	15	6	3
Naukri	Always	0	6	19	13	5
	Sometimes	0	0	0	0	0
	Usually	0	0	0	0	0
	Rarely	0	0	0	0	0
	Never	0	0	0	0	0
Other Portals	Always	0	0	0	0	0
	Sometimes	0	0	0	0	0
	Usually	0	0	0	0	0
	Rarely	0	0	0	0	0
	Never	0	6	19	13	5
Social Networking	Always	0	0	1	0	2
	Sometimes	0	1	9	4	1
	Usually	0	3	3	3	1
	Rarely	0	1	3	6	1
	Never	0	1	3	0	0
	Always	0	1	5	2	3
	Sometimes	0	0	3	5	0

Table 1.1 clearly shows that irrespective of the recruitment tools used, candidates are never readily available. Out of the total 43 recruiters 100 per cent have responded and agreed on always using naukri.com and no other job portals and 13.95 per cent of them agreed on getting candidates within a day, 44.19 per cent agreed on within a week, 30.23 per cent agreed on within 15 days and 11.63 per cent agreed on within a month by always using naukri. Recruiters can get candidates within a week by sometimes using referrals, 4.65 per cent recruiters agree to this point; while 20.93 per cent agree on social networking, 6.98 per cent agree on personal database and 2.33 per cent agree on mass mailing. The data indicates that for Opterna, naukri.com has turned out to be the most effective recruitment tool and there is a high demand for experienced employees. While the supply of experienced employees is much less leading to an increase in time to recruit.

2. **Recruitment criteria of Opterna recruiters :** The Study has attempted to understand the criteria on which recruitment takes place which is depicted in table 1.2 and graph 1.1. Table 1.2: Frequency of recruitment criteria according to ranks given by recruiters

Ranks Criteria	Most Imp	Percent	Imp	Percent	Least Imp	Percent	Total	Total Percent
Education Qualification	5	11.6	38	88.4	0	0	43	100
Sound Knowledge	30	69.8	13	30.2	0	0	43	100
Experience	28	65.1	15	34.9	0	0	43	100
Immediate Joinee	35	81.4	8	18.6	0	0	43	100
Communication Skill	1	2.3	17	39.5	25	58.2	43	100
Specialized Skills	17	39.5	25	58.2	1	2.3	43	100
Relocate	21	48.8	21	48.8	1	2.4	43	100
Salary	14	32.6	29	67.4	0	0	43	100
Contract Work	37	86	6	14	0	0	43	100
Personality	0	0	8	18.6	35	81.4	43	100

Graph 1.1: The recruitment criteria according to level of importance as per the recruiters.
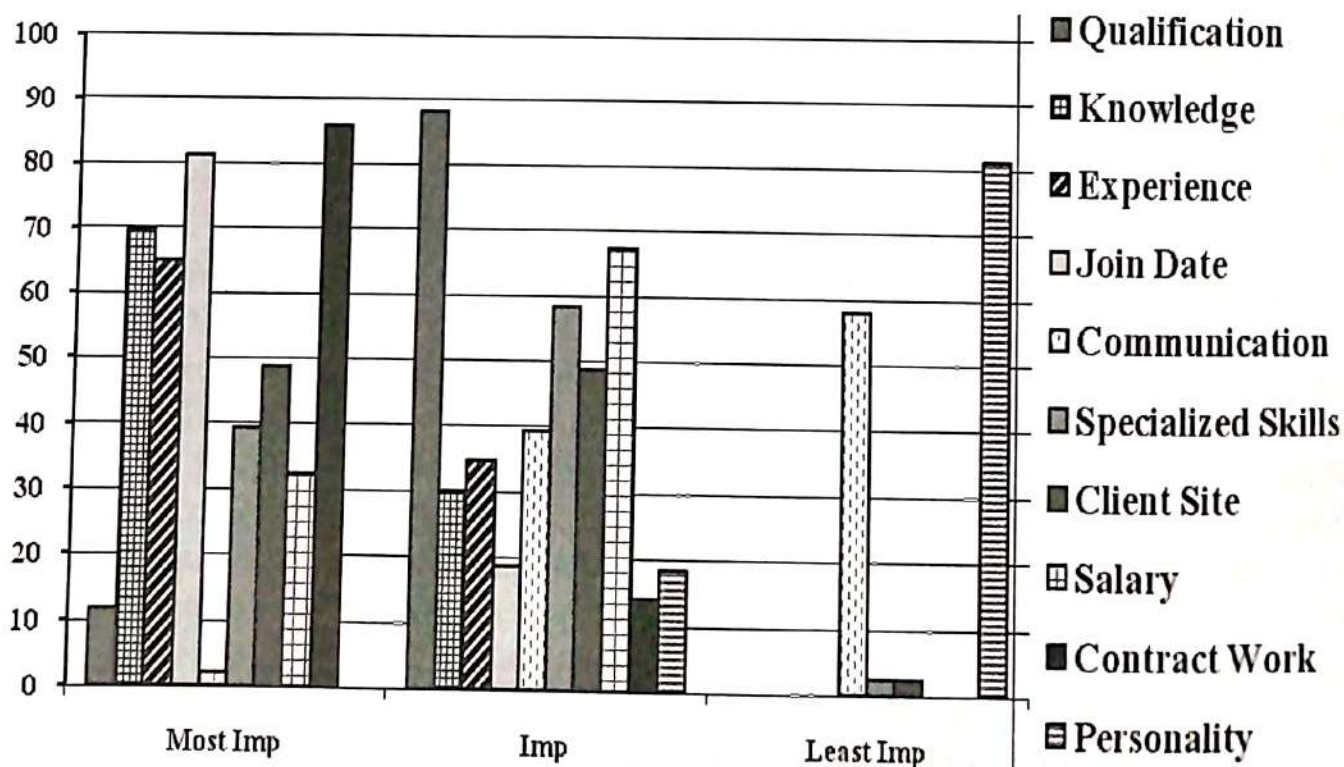
Table 1.2 and graph 1.1 show that while searching for candidates 86 per cent recruiters give more importance to candidates willing to work on temporary basis, 81.4 per cent recruiters agree on giving more importance to joining date, 69.8 per cent recruiters agree on giving more importance to sound knowledge and 65.1 per cent recruiters agree on giving more importance to experience. Only 11.6 per cent of the recruiters agree on qualification being the most importance criteria while looking for candidates whereas 18.6 per cent of the recruiters agree on giving importance to personality while 81.4 per cent of the recruiters agree on giving least importance to it. Considering the technical aspect of the job, knowledge is given more importance than the qualification and candidates are not expected to have high communication skills or personality, it is sufficient if they can put across their thoughts and understand what their superior expects from them. The findings also relate to the study of Drucker (2002), that the productivity of the people they supply to a client depends not only on the knowledge, experience, skill and personality of the temp workers but where those workers are placed, who manages and motivates them on which temp agency hardly has any control.

3. **Recruitment criteria of the Client Company :** The Study attempted to understand the Client Criteria for selecting a candidate according to its importance which is depicted in table 1.3. Table 1.3: Frequency distribution of the client criteria for selecting a candidate

Ranks / Client Criteria	Most Imp	Percent	Imp	Percent	Least Imp	Percent	Total	Total Percent
Degree	17	51.5	16	48.5	0	0	33	100
Knowledge	31	93.94	2	6.06	0	0	33	100
All Requirement Fulfilled	15	45.5	18	54.5	0	0	33	100
Communication Skill	7	21.2	26	78.8	0	0	33	100
Talent	31	93.9	2	6.1	0	0	33	100
Team Player	33	100	0	0	0	0	33	100
Leadership Skills	14	42.4	19	57.6	0	0	33	100
Initiation Skills	24	72.7	9	27.3	0	0	33	100
Learning desire	20	60.6	13	39.4	0	0	33	100

Table 1.3 shows that while looking for candidates, out of the total 37 clients in bangalore, 33 responding clients agree on team work being the most important criteria followed by sound knowledge and talent agreed by 93.94% clients since established companies have time constraints they prefer trained employees with good knowledge, the client

companies consider this as to be the most important criteria. 51.5% clients agree on degree being the most important criteria while the remaining 48.5% clients agree on it being important. Considering the fact that there are companies involved in government projects so even degree and certification courses are given importance. This is in contrast with the Opterna's recruitment criteria to which company needs to pay attention. 45.5% of the clients expect candidates to meet all their expectations while only 42.4% of the clients agree on leadership skills being the most important criteria.

4. **Importance of the facilities provided by Opterna to its employees :** Considering Opterna to be a CMMI L5 (Capability Maturity Model Integration) company and its clients are also big players so providing good facilities, maintaining safety conditions is not a problem as agreed by 52.5 per cent of the recruiters. Company's temporary staffing provides employees with the opportunity of work sharing in certain conditions depending on the availability of alternate employee helping in work/life balance as indicated by 52.5 per cent recruiters. Since the project duration is for the short term client companies rarely provide training and expect trained employees. So 55.7 per cent recruiters disagree on providing

training programmes. So the facilities and its work sharing programme can help in attracting and retaining employees but lack of training programme will prevent long term relation between employee and Opterna unless employee's don't enroll themselves in some training courses.

5. **Meeting the candidate requirement using various sources:**

Since candidates are not readily available most of the client companies depend on many other sources to meet their employee requirements as indicated by 37.8 per cent of the clients compared to 8.1 per cent depending only on Opterna. However there are other factors that contribute to deciding the number of companies like the contract charge, commission and meeting the requirement other than their response time in providing employees.

6. **Candidate's changing job expectations with their experience:**

The study has attempted to understand the candidate's expectation from the job vis-à-vis his/her experience. Table 1.4: Frequency distribution of the candidate's expectations from the job against their experience

Expectation \ Experience		1-3 years	3-5 years	5-8 years	+8 years
Pay	SA	10	14	1	0
	A	2	19	13	2
	N	0	0	0	0
	D	0	0	0	0
	SD	0	0	0	0
Company Brand	SA	9	26	7	2
	A	3	6	7	0
	N	0	1	0	0
	D	0	0	0	0
	SD	0	0	0	0
Designation	SA	6	31	14	2
	A	6	1	0	0
	N	0	1	0	0
	D	0	0	0	0
	SD	0	0	0	0
Job Security	SA	1	14	11	2
	A	11	19	3	0
	N	0	0	0	0
	D	0	0	0	0
	SD	0	0	0	0
Benefits	SA	9	12	3	0
	A	3	20	11	2
	N	0	1	0	0
	D	0	0	0	0
	SD	0	0	0	0
Challenging Work	SA	9	31	14	2
	A	3	2	0	0
	N	0	0	0	0
	D	0	0	0	0
	SD	0	0	0	0
Decision making	SA	3	15	13	2
	A	9	18	1	0
	N	0	0	0	0
	D	0	0	0	0
	SD	0	0	0	0

Career	SA	3	16	13	2
	A	9	17	1	0
	N	0	0	0	0
	D	0	0	0	0
	SD	0	0	0	0
Recognition	SA	9	32	14	2
	A	3	1	0	0
	N	0	0	0	0
	D	0	0	0	0
	SD	0	0	0	0
Flexibility	SA	5	18	5	0
	A	5	15	9	2
	N	0	0	0	0
	D	2	0	0	0
	SD	0	0	0	0
Manager Support	SA	8	31	14	2
	A	4	2	0	0
	N	0	0	0	0
	D	0	0	0	0
	SD	0	0	0	0
Training	SA	10	17	1	0
	A	2	16	12	2
	N	0	0	0	0
	D	0	0	1	0
	SD	0	0	0	0
Work Culture	SA	8	30	14	2
	A	4	3	0	0
	N	0	0	0	0
	D	0	0	0	0
	SD	0	0	0	0
Social Events	SA	0	10	10	1
	A	11	23	4	1
	N	0	0	0	0
	D	1	0	0	0
	SD	0	0	0	0

Going with the Maslow's need hierarchy, it can be seen that employees with 1-3 years of experience strongly agree on pay and training opportunities being the criteria as noted by 10 employees followed by company brand, benefits, challenging work and recognition as noted by 9 employees while looking for a job. These employees are comparatively less concerned with decision making opportunities and career planning as strongly agreed by 3 employees. Employees with more than 3 years but less than 5 years of experience strongly agree on recognition as noted by 32 employees, followed by designation,

challenging work and manager support as noted by 31 employees. Employees with 5 to 8 years of experience strongly agree on designation, challenging work, recognition and manager support being the most important criteria agreed by 14 employees followed by decision making power, career planning and job security. These employees however agree on pay being a factor while looking for job. Most of the employees look for settling and thus very few employees with more than 8 years experience exist in temporary job. Thus in case of temporary employees pay always plays part of job expectations also there are many factors affecting their job expectations like their previous job experience, financial commitments etc.

7. **Importance of employees' recommendations towards staffing company :** Although most of the employees have alternate job options still most of them are with the staffing company due to some form of necessity and so disagree on recommending the staffing company inspite of agreeing on views that the company takes care of their comfort. This indicates that the current scenario has opened up lot of job opportunities especially for the experienced employees but most of them are currently with the staffing firm for their necessity and are looking for some better options for switching jobs. Thus the staffing company needs to work on preventing attrition. Considering that the employees agree on not being loyal to their company getting

employees will be difficult in future as word of mouth also is playing an important role for employee attraction.

8. **Employee's view pertaining to their client companies :** Considering that a large number of employees, 44.3 per cent strongly agree on speaking about their client companies followed by their high interest towards client also 80.33 per cent employees agree on honest work efforts without extra breaks. This entirely shows temporary employee's high interest towards joining the client company. 45.9 per cent of employees agree on distance being a factor for job selection so companies need to give attention to this aspect while understanding the talent acquisition practices. We also see 19.69 per cent of employees disagreeing on interest towards client with 11.5 per cent disagreeing on favourable work environment, this indicates there is a slight bias towards permanent employees compared to temporary employees and the work environment still needs to be developed for supporting temporary staffing.

9. **Importance of projects for temporary employees :** The Study has attempted to understand the views of temp employees towards their projects.

Table 1.5: Frequency distribution and percentage of the views of temp employees towards their projects.

	Happy with Project	Chance to give opinion	— —	Heavy Work load	Sufficient Trained
SA	30 (49.18%)	10 (16.4%)	5 (8.2%)	1 (1.6%)	17 (27.9%)
A	25 (41%)	38 (62.3%)	47 (77%)	7 (11.5%)	44 (72.1%)
N	2 (3.27%)	5 (8.2%)	4 (6.6%)	3 (4.9%)	0 (0%)
D	4 (6.55%)	8 (13.1%)	5 (8.2%)	45 (73.8%)	0 (0%)
SD	0 (0%)	0 (0%)	0 (0%)	5 (8.2%)	0 (0%)
Total	61 (100%)	61 (100%)	61 (100%)	61 (100%)	61 (100%)

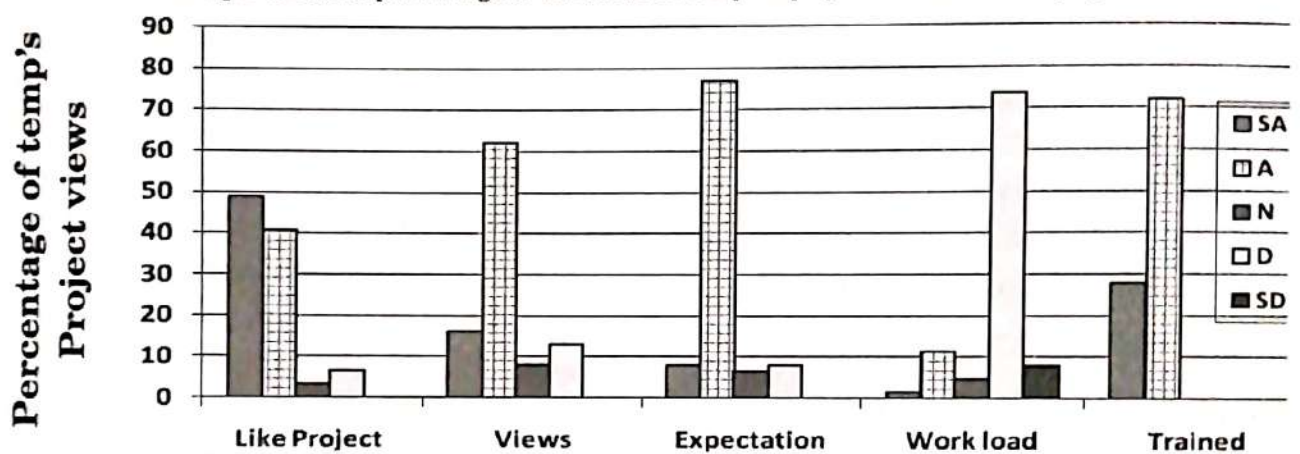**Graph 1.2 :** The percentage of the views of temp employees towards their projects.

Table1.5 and graph 1.2 shows temp employees are highly satisfied with the projects they work and 30 employees strongly agree to this point and they do get an opportunity to give their views towards projects and are clear with expectations from them. Majority, 73.8 per cent of them agree with work load not being excess compared to permanent employees. Their view of they having sufficient training to handle their job shows they are the right person fit for task assigned so they can complete their allocated projects without issues. All this shows reduced dropout between projects. It can be seen that a large number of employees 77 per cent of them agree on being aware of job expectations, 62.3 per cent agree on getting a chance to voice their opinions and 41 per cent of them agree on being happy with the project and Thus being aware of the IT scenario and in spite of heavy deadlines if employees still show happiness over project then just by providing them the opportunity of working on the projects of their desire can lead to rise in talent acquisition.

10. **Influence of group on temporary employees :** The Study has attempted to understand the view of temp employees towards their group depicted in table 1.6 and graph 1.3

Table 1.6 : Frequency distribution and percentage of the views of temp employees towards their group

	Fair treat	Happy with Group	Emotional Attach	Approach team for help	Knowledge Sharing	Only Work related talk
SA	7 (11.5%)	5 (8.2%)	2 (3.3%)	12 (19.7%)	17 (27.86%)	2 (3.2%)
A	43 (70.5%)	38 (62.3%)	12 (19.7%)	43 (70.5%)	32 (52.46%)	14 (23%)
N	3 (4.92%)	7 (11.5%)	23 (37.7%)	2 (3.2%)	5 (8.2%)	2 (3.2%)
D	7 (11.48%)	11 (18%)	24 (39.3%)	4 (6.6%)	7 (11.48%)	33 (54.1%)
SD	1 (1.6%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	10 (16.5%)
Total	61 (100%)	61 (100%)	61 (100%)	61 (100%)	61 (100%)	61 (100%)

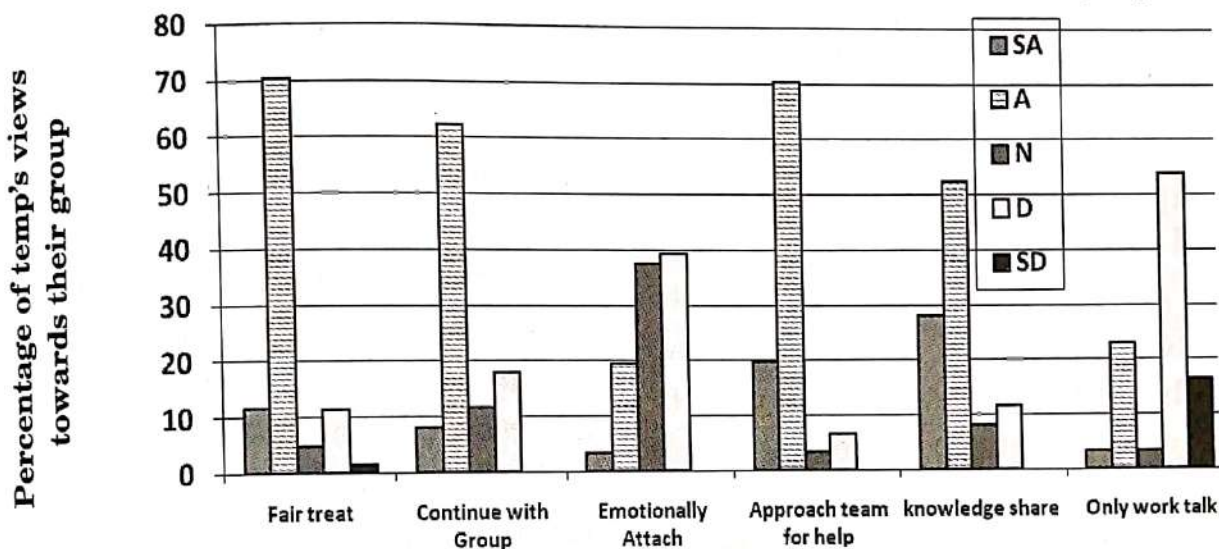**Graph 1.3 :** The percentage of the views of temp employees towards their group.

Table 1.6 and graph 1.3 show that view point towards their group members. 70.5 per cent of temp employees agree that they are fairly treated in the client firm and that they don't mind continuing with the firm. 39.3 per cent of them disagree to emotional attachment with the group indicates the fact that they are aware of not staying together for long. Thus it can be said that even though temporary staffing job cannot create a long term relation but some kind of bonding is built among likeminded employees that can help in reducing attrition. There is also an increased amount of knowledge sharing among the group and more of the casual talks than sticking strictly with work related talks.

Suggestions based on the findings

Opterna can conduct training for potential employees so as to solve the problem of candidates meeting the lack of requirements. Opterna requires strengthening its relation with its client companies and needs to exactly understand its client's requirements. A clear understanding of the labour market and communicating it to the

client regarding the time required to get candidates with expected skill sets will help in long term relations. It is also important for the company to understand and fulfill individual requirements so as to increase the talent attraction and retention. Understanding the gap between what the companies believes to be providing its employees and what the employees expect, meeting employees expectations may help in reducing the attrition rate. Since employees look for changing jobs only when they find their needs can't be met here but certainly are met outside. So meeting their needs is the first step in reducing the attrition.

Company needs to work on building its brand name; word of mouth has been playing an important role in talent acquisition practices. Research has shown that first Impression plays an important role in attracting and retaining talent and the first time impression remains for long time so company needs to make sure of delivering the promised and not overselling. Since temp employees spend most of their time in the client site, it is important to consider the fact that the client work climate, the project they work on and the group they are associated with are in harmony. Temp employees will be satisfied with their firm when they are happy with client and they show their inclination towards referrals. So company can come up with attractive incentives for successful referrals. The company can even consider entering into permanent

staffing as current Indian scenario shows employees more concentrating on joining company as a permanent employee. Since there are lot of staffing firms coming up in Indian market, conducting research can help in changing the mindset of people regarding temporary staffing.

Conclusion

In a recruitment market where the concept of full-time employment is increasingly becoming a thing of the past, temporary staffing is emerging as the viable option. This does not mean the companies need to appreciate the value of existing employees and not just concentrate on increasing their headcount. A well developed staffing industry that offers an organized and transparent work arrangement will certainly enhance employment opportunities for workers. Since Temp staffing is associated with number of negative attributes like low employment security, low level of training, discrimination from permanent employees act as hindrances to temporary staffing development in India. However, good HR practices along with brand building and adopting innovative approaches can minimize impact of employee turnover. Since temporary staffing is expected to grow exponentially in the country, it is necessary for outsourcing partners to be equipped with vertical and functional specializations, with key differentiators customized to the Indian employment scenario. Respect, recognition and rewards can play a major role in reducing

the employee turnover in addition to increasing productivity, reducing absenteeism, creating a more pleasant work environment and improving the profits.

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TECHNOLOGY, SERVICE QUALITY AND CUSTOMER SATISFACTION IN BANKING SECTOR : A STUDY WITH REFERENCE TO CHITTOOR DISTRICT, ANDHRA PRADESH

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Abstract : *Banking is one of the fast growing competitive finance industry in our economy. To face the competition and sustained growth of business in banking sector, the customer must be satisfied through quality services with new technology. The bank relationship with customer must be permanent, when the quality of new services provided by a bank. In this study an attempt has been made to ascertain the level of satisfaction of customers with banking services and technology. The structured questionnaire is used to collect the data from the customers. To analyze the results, various statistical techniques such as percentages, mean, standard deviation and coefficient of variations were used.*

Keywords : *Banking, Technology, Services, Satisfaction*

Introduction : Banking sector plays an important role in contributing to the economic development of a country. The financial service is the backbone of service sector. This is important not only for the banking sector but also Indian economy as a whole. To maintain stability in the business the customers have become most important. Customer services and satisfaction are essential for banking industry to survive in the competitive world. Banking being a service business, the best strategy is to identify with the customers and offer them what they actually need. The rapid change of services in banking system has led to the evolution of a highly competitive and complex market where there is a continuous refinement of services.

Today the customers' expectations are increased in many folds. All the customers particularly in urban areas, they are no longer want to wait in long queues and spend hours in banking transactions. To avoid spending valuable time by the customers, the banks developed ATMs, phone and net banking along with availability of services at the customers doorstep. The stiff competition among banks has redefined the concept of the entire banking system. The increased competition leads to change in the functional orientation and purpose of banks. All the financial institutions both public and private are trying to provide

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all the services at the customer's doorstep. Now a days the banks are looking for new ways to attract and also to retain the customers and this could gain competitive advantage over the competitors. To satisfy the customer's various requirements and expectations there is a need to implement universal banking system with an aim to provide all banking process and schemes, services offered under one roof with quality.

Review of Literature

The study of Lowis B 1990 reviewed the importance of satisfying the present customer's virtue of offering the quality of services as pursued by the customers and establishes long term customer relationship. This study has insisted that the satisfaction of present customer is the pre requisite for any service producing organization, to which the bank is not an exemption. Bandyophadhyaya S C 1994 highlighted that the banks should not only satisfy the routine functions of the customers but also think of innovative ideas of new services to retain the existing customers. According to Jacob Mankidy 2000 that the ignorance, overpowering, neglecting colleagues by bank managers are bad and this would lead to low quality of bank services. Vimala. D (2007) study examined that the facilities provided by private sector banks have resulted in increased customer satisfactory level and suggested the improvements attained in the existing facilities would increase the customers' satisfaction

level. Jayachand T.K. (2008) Study revealed that the adoption of advanced technology supplemented by PC banking, web pages, ATM and call centers are the need of the present banking business to retain the customers positive attitude towards the banking services. Rayappan and Shanmughan (2008) examined by using regression analysis to know the relationship between the satisfaction score of the customers and independent variables such as gender, age, marital status, educational qualifications and other demographic profile of the customers and their total awareness. To ascertain the influence of different sets of independent variables on satisfaction, eight separate regression models were used. Trivedi and Agarwal (2009) examined and highlighted the five dimension of customer satisfaction that is tangibility, reliability, responsiveness, assurance and sympathy. Banks performance and its strengths and weaknesses are evaluated with regard to set of satisfaction parameters. Keerthe and Vijayalakshmi (2009) examined the perception level of customer with the respondents' demographic profile such as gender, age, and marital status, number of family members, educational qualification, occupation and monthly income. Mishra (2010) in his study suggested that adopting different types of marketing strategies to retain and satisfy the customers. Balakrishnan (2010) viewed that the value of services provided should be measured in terms of quality and quantity. The success of

banks to be depends up on not only 'just hitech' but also 'hightouch' that is staying in touch with customers. Ghosh and Kailash (2010) measured the satisfaction level of customers by using factors such as service quality, customer loyalty and customer commitment. Customers' knowledge about the services of bank is also one of the important factors to get complete satisfaction.

Need and Importance of the Study

In any country if customer oriented services becomes failure, this would lead to phenomenal loss to the government revenues. Customer oriented service helps to meet the national objectives. The banking companies with top rating in the customer services survive for long run with high returns (Kuralovian 2006). Navita Nathani, K K Agarwal and Umesh Holani 2007 identified that the customer services of the banking companies with hi-tech services and products such as ATM, Credit cards, debit cards, smart cards, petro cards, tele banking, electronic transfer, electronic clearing services, online banking, e-banking, internet banking any time banking and any where banking customer care and customer concern becomes more important. The success of banking industry thus depends on the speed and quality of customer services provided by the banking industries. Man banking sector has been successful in getting fundamental objectives but it has to make large field of operations in the year to come. The banking sector should take positive steps and policies in the near future to satisfy the maximum extent to the banking customers.

Limitations of the Study

The geographical scope of the study was limited to Chittoor District and does not represent the whole state. This study is limited to only banking customers.

Objectives

1. To study the demographic profile of the customers.

2. To study the satisfaction level of the customers from the services offered by banks.

3. To offer suggestions for the improvement of banking services to attract and satisfy the customers.

Research Methodology and Sampling Units

450 customers were selected as sample respondents. So, the questionnaire was administered to 450 respondents. The Chittoor district has three revenue divisions i.e., Chittoor, Tirupati and Madanapalle. All the sample respondents were selected from each revenue division equally (150) to carry out the study in a more accurate and easier way, the researchers by applying convenience sampling method. The questionnaire consists of five parts. The first part contains questions on demographic characteristics and some general information about the customers. The remaining four parts consists of questions on various factors like convenience, cost, facilities and general services of banks. Respondents

were asked to rate the level of satisfaction based on five-point Likert scale ranging from most satisfied to most unsatisfied. Sampling units were customers of the banks. Analysis and interpretation had been drawn with the help of various statistical techniques such as percentage, mean and standard coefficient of variation.

Data Analysis and Findings

The questionnaire also consists of customer profiles. This was done because an assortment of demographic and other factors were likely to influence the degree of customer satisfaction with regard to the products and services offered by the bank. The study of demographic features is also useful in formulating the bank's marketing strategy. The demographic profile of the respondents is framed in Table 1.

Table 1: Demographic Profile of the Respondents

S. No.	Demographics	F(Frequency)	%
1	Gender		
	Male	306	68
	Female	144	32
2	Age in Years		
	Below 25	99	22
	26-35	117	26
	36-45	153	34
	Above 45	81	18
3	Marital Status		
	Married	252	56
	Unmarried	171	38
	Other	27	6
4	Monthly Income		
	Up to 10,000	126	28
	10,001 to 15,000	153	34
	15,001 to 20,000	108	24
	Above 20,000	63	14
5	Educational Status		
	Undergraduates	99	22
	Graduates	162	36
	Postgraduates	117	26
	Others	72	16
6	Employment Status		
	Self-Employed	144	32
	Service-Related Work	153	34
	Professional	126	28
	Others	27	6

Table 1 shows that among the 450 respondents, 68% were male and 32% female. Further age wise, 22% were in the age group of below 25 years, 26% in the age group of 26 to 35, 34% the age group of 36 to 45 and 18% in the age group of 45 years above. As for marital status, 56% were married, 44% were single and only 6% consisted of others. The survey shows that 28% of the respondents come under income group of below Rs.10,000, 34% are in the group of Rs. 10,001 to 15,000, 24% lie between Rs.15,001 to 20,000 and only 14% in the group of above Rs.20,000. Similarly the education level shows that 22% are undergraduates, 36% graduates, 26% postgraduates and 16% others. Further in employment status, 32% are self employed, 34% are engaged in service related work, 28% are professionals and 6% in other jobs. In this study an attempt was made to find out to what extent the customers are satisfied with the services provided by the banks. The level of satisfaction of the customer must increase when increase in the quality services offered by banks. The factors

influencing that the level of customers satisfaction are shown in Table 2 & 3. along with percentage, mean, standard deviation and coefficient variation. In this study totally four factors have been considered Convenience factor, Cost factor, Facility factor and other general factors. The factors are discussed as follows.

Table 2 : Percentage, Mean, Standard Deviation and Coefficient of Variance (CV) of Customer's Satisfaction Level Regarding Banking Services.

Factors	Most Satisfied	Satisfied	Not sure or No Opinion	Un-satisfied	Most Un-satisfied	Mean	Standard Deviation	CV (in %)
1.Convenience								
Procedure of opening account	40	27	14	9	10	3.78	1.323	35
System of depositing cash	35	28	21	10	6	3.76	1.201	31.9
Working hours of bank	48	24	7	11	10	3.89	1.37	35.2
Location of branch	28	39	18	11	4	3.76	1.097	29.2
Procedure to apply for loan	18	23	23	21	15	3.08	1.324	43
System to repay loan	21	28	26	16	9	3.36	1.229	36.6
2.Costs								
Rate of return on SB account	12	17	19	28	24	2.65	1.329	50.2
Rate of return on FD account	11	19	24	25	21	2.74	1.285	46.9
Processing charges on loan	18	27	22	24	9	3.21	1.243	38.7
Interest on new deposit scheme	16	24	27	19	14	3.09	1.274	41.7
Fees for collecting outside check	19	34	23	16	8	3.4	1.192	35
Charges on other services	26	23	21	18	12	3.33	1.349	40.5
Interest on loan	26	21	19	19	15	3.24	1.408	43.5

Factor 1- Convenience : This is one of the most important attributes which determines the customer's satisfaction level regarding banking products and services. About 72% of respondents are satisfied regarding to the working hours of bank with mean 3.89 and SD 1.370. The higher the value of mean the high will be the level of satisfaction. Lower the standard deviation higher will be the satisfaction and similarly lower coefficient variation higher will be the satisfaction.

Then the highest mean (3.78) is for service that is procedure of opening account with SD 1.323. 67% of the respondents are satisfied with the location of branch with mean 3.76 and SD 1.097. 63% of respondents are satisfied with system of depositing cash with a mean 3.76 and SD 1.201. Only 49% respondents are satisfied regarding the system to repay loan with a mean 3.36 and SD 1.229. Finally 41% of the respondents are satisfied with the procedure to apply for a loan with a mean of 3.08 and SD 1.324.

Factor 2- Cost : In this cost factor there are seven items. Cost factor is one of the important factors that affect the customer satisfaction level. The study critically reveals that 52% of the sample respondents are not satisfied with the bank service i.e. rate of return on SB account with lesser mean of 2.65 and SD at 1.329. 46% of the sample respondents are also not satisfied with the interest on FD, with mean of 2.74 and SD 1.285. Only 45% of the respondents are satisfied with the processing charges on loan charged by a banker with a mean of 3.21 and SD 1.243. About 40% of the respondents are satisfied with the interest on new deposit schemes with a mean of 3.09 and SD 1.274. 24% of the respondents are not satisfied with the fees for collecting outside cheque with a mean of 3.4 and SD 1.192. 49% of the sample respondents where highest satisfaction is found for the factor charges on other services with a mean 3.33 and SD 1.349. 47% of the respondents are satisfied with interest on loan with a mean 3.24 and SD 1.408.

Table 3 : Percentage, Mean, Standard Deviation and Coefficient of Variance (CV) of Customer's Satisfaction Level Regarding Banking Services

Factors	Most Satisfied	Satisfied	Not sure or No Opinion	Un-satisfied	Most Un-satisfied	Mean	Standard Deviation	CV (in %)
3.Facilities								
Loan facility	15	21	22	26	16	2.93	1.306	44.6
O/D facility	24	20	29	14	13	3.28	1.320	40.2
Cash credit	27	24	19	16	14	3.34	1.387	41.5
Traveler's cheques	20	26	24	18	12	3.24	1.289	39.8
ATM	64	14	13	7	2	4.31	1.065	24.7
New deposit schemes	45	21	14	11	9	3.82	1.344	35.2

Mobile banking	12	19	23	28	18	2.79	1.275	45.7
Credit card	43	24	15	10	8	3.84	1.294	33.7
Internet banking	21	23	27	13	16	3.2	1.342	41.9
WUMT	12	17	22	24	25	2.67	1.335	50.0
RTGS	16	19	18	29	18	2.86	1.349	47.2
EFT	19	16	27	18	20	2.96	1.378	46.5
Demat account	21	24	18	16	21	3.08	1.440	46.8
Safe custody	53	25	13	5	4	4.18	1.090	26.1
Mutual Fund	24	17	20	18	21	3.05	1.465	48.0
Telephone bill	23	24	26	14	13	3.3	1.315	39.9
4.General Factors								
Courtesy at the counter	15	26	18	20	21	2.94	1.377	46.8
Promptness in transactions	24	27	16	20	13	3.29	1.366	41.5
Prompt redressal of grievances	19	24	23	19	15	3.13	1.332	42.5
Modernization	36	27	13	14	10	3.65	1.352	37.0
Communication	26	30	17	12	15	3.4	1.378	40.5
Providing guidance	30	25	14	18	13	3.41	1.408	41.3

Factor 3- Facility : This is another important prime factor which the highest level of satisfaction lies. This consists of total 16 items. This study reveals that the satisfaction level in case of ATM is very high followed by safe custody and credit card with the highest mean of 4.31, 4.18 and 3.84 respectively. Next rank as given to new deposit schemes followed by cash credit and overdraft facilities where the customers are more satisfied with a mean of 3.82, 3.34 and 3.28 respectively. 42% of the respondents were not satisfied in the loan facility with mean of 2.93 and SD 1.306. 46% of the sample respondents were satisfied in the service of travelers' cheque with the mean of 3.24 and SD 1.289. As compared to different types of facilities such as internet banking, WUMT,RTGS and EFT is a mean with 3.2,2.67,2.86 and 2.96 respectively. The satisfaction level of Demat account

shows with a mean 3.08 and SD 1.440. 41% of the respondents were satisfied in the mutual fund with a mean of 3.05 and SD 1.465. Finally 47% of sample respondents are satisfied with the service of telebanking with a mean of 3.3 and SD 1.315.

Factor 4- General : There are six items in this factor. Customers are more satisfied with the modernization and providing guidance with the highest mean of 3.65 and 3.41 and SD of 1.352 and 1.408 respectively. Nearly 51% to 56% of the sample respondents are satisfied with the promptness in transactions and communications with a mean of 3.29 and 3.4 and SD of 1.378 respectively. 41% respondents are satisfied with the courtesy at the counter with the lowest mean of 2.94 and SD 1.337. Finally 43% of the respondents are satisfied with the prompt redressal of

grievances with mean of 3.13 and SD 1.332.

All these factors significantly affect the level of customer satisfaction with regard to banking products and services and will be of concern to both bankers and customers. Therefore, banking institutions have to maintain the highest satisfaction level of the customers to preserve their market share.

Suggestions:

Based on the study, it can be said that most of the banks have done their best to increase the customer satisfaction level. However, the following suggestions are considered, to do better in their services:

1. In our study most of the customers are not satisfied with regard to services like loan facility, WUMT, RTGS and courtesy at the counter. Therefore, the banks should pay special attention to improve these services.

2. The bank officials should maintain good relationship with the customers by providing social banking environment.

3. The information regarding the new services, investment schemes should be displayed on the boards in the banks and they should also pass on the information by distributing brochures.

4. The loan applying procedure should be made more simpler so that every customer can easily fill the forms and avail themselves of the loans provided by the bank.

5. Most of the customers in the bank stand in a long queue to deposit their amount. The reason for this is that the bank has only one deposit counter. Therefore, keeping in mind the customers valuable time, they should provide more deposit counters where the customers can do multi-transactions.

6. The banks should develop innovative and modern advanced technology required in the services of banks to face the competition from other banks.

Nearly 65% of the total population live in the rural areas, so the banks should capture the market by satisfying the requirements of the rural and semi urban people with new branches, new schemes and also provide requisite information which will be useful to the customers.

Conclusion:

The banks success mainly depends up on its customer services. Customer satisfaction is crucial for bankers in the long run which is an integral part of business. Fast increase in number of customers and stiff competition among public and private sector banks enhance the demand for quality banking services. Now a days the speed, service quality and customer satisfaction are going to be key factors for each of the banks future success. Banks should satisfy the customer needs by providing maximum quality features in their services.

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APPLICATION OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN SMALL AND MEDIUM ENTERPRISES : A REVIEW OF LITERATURE

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Abstract : Small and Medium Enterprises (SMEs) are an important component of the economy of a country. Information and Communication Technology (ICT) offers tremendous opportunities for the growth and development of SMEs. A number of researchers have tried to explore and investigate various dimensions of the association between ICT and SMEs. Small firm e-business themes that have been investigated include internet usage, website adoption, application of ICT in various operations and processes of SMEs, overcoming barriers to ICT adoption, models of e-business development, and achieving competitive advantage through e-business development. This paper makes an attempt to link various recent researches to present an integrated picture.

Key Words: Small and Medium Enterprises, supply chain management, website, internet

Introduction : Small and Medium Enterprises (SMEs) are usually defined as enterprises that employ not more than 250 employees. The definitions of "small" and "medium" sized enterprises differ from one country to another. SMEs have been defined against various criteria such as the number of workers employed, the volume of output or sales, the value of assets employed, and the usage of energy. The European Union defines the micro-organization as employing up to 9 workers, the small enterprise having between 10 and 99 employees and the medium-sized enterprise having 100–499 employees. The United States of America defines small businesses as having up to 500 employees. In the Asia-Pacific region, SMEs are defined based on employment, assets or combination of the two. The most common range in many countries is from 50-200 employees. Other definitions are based on whether the owner of the enterprise works alongside the workers, the degree of sophistication in management, and whether or not an enterprise lies in the "formal" sector. For example, the OECD (Organisation for Economic Cooperation and Development) defines establishments with up to 19 employees as "very small"; with up to 99 as "small"; from 100 to 499 as "medium"; and with over 500 as "large".

The most widely accepted definition is the one based on the ideas of the Bolton committee (1971). The committee identified the following three important

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factors of a SME:

- they have a relatively small share of their market place;

- they are managed by owners or part owners in a personalized way, and not through the medium of a formalized management structure;

- they are independent, in the sense of not forming part of a larger enterprise.

In India the Micro, Small and Medium Enterprises Development Act, 2006, defines SMEs on the basis of investments in plant and machinery. For enterprises engaged in the manufacture of goods:

- Micro - Investment in plant and machinery less than Rs 2.5 mn

- Small - Investment in plant and machinery over Rs 2.5 mn but not exceeding Rs 50 mn

- Medium – Investment in plant and machinery in excess of SSI limit but less than Rs 100 mn

For enterprises engaged in providing or rendering of services:

- Micro - Investment in equipment not exceeding Rs 1 mn

- Small - Investment in equipment over Rs 1 mn but not exceeding Rs 20 mn

- Medium – Investment in equipment is in excess of SSI limit but less than Rs 50 mn

Small businesses make substantial contributions to national economies and are estimated to account for 80% of global economic growth (Jutla et al., 2002). Small and Medium Enterprises (SMEs) are seen as a critical component in the economic growth of developing countries because they are major source of income, promote entrepreneurship, and provide employment. For this reason, a considerable attention is paid to positioning SMEs to capture emerging business opportunities that have been created by the emergence of knowledge based societies. Many of them are already demonstrating their potentials and capabilities by grasping the opportunities offered by Information and Communication Technology (ICT). Luetkenhorst (2004) found that on an average, they represent over 90% of enterprises and account for 50-60% of employment at a national level.

Despite their potential to contribute to economic growth, Medium and Small Enterprises (MSMEs) are unable to compete well due to exogenous and endogenous constraints (Harvie and Lee, 2002; Kirby and Watson, 2003; Brown, Earle and Lup, 2005; Fogel, Hawk, Morck and Yeung, 2006). Institutional analysis has been used in a variety of ways to diagnose and offer remedies to the functional, performance, and competitiveness issues associated with MSMEs (Basu 1998; Busenitz, Gomez and Spencer, 2000; Carlsson, 2002; Carney and Gedajlovic, 2002). Internet and developments in Information and Communication Technologies (ICTs) have opened new markets and considerably altered existing ones (Brynjolfsson & Kahin, 2002). The

emergence of the ICT has opened up many other opportunities for SMEs. Applications of ICT have been studied in detail by many researchers. These studies have been presented in the following section.

ICT IN SUPPLY CHAIN

ICT can assist in improving the supply chain management. Network technologies seems to enhance efficiency through a reduction in transaction costs and bring new commercial opportunities for small firms. Hvolby and Trienekens (2002) designed a framework for supply chain planning for small and medium sized companies and believe that increased customer demands and new ICT opportunities will require new system solutions for SMEs in the areas of vendor-managed inventory, supplier hubs, electronic markets and advanced planning systems, to be able to take part of the network economy.

Zheng et al. (2004) have examined how e-business affects small firms in supply chains. They mentioned the widening gaps between large and small firm investment and strategy for exploitation of e-business and developed a new framework based on three key issues—cautiousness, contingency and cost-benefit. This has been supported by Koh and Saad (2006), who observed that information sharing is an enabler for better coordination and planning of the supply chain. In spite of these benefits, it seems that, in the supply links of SMEs, information systems are hardly used to share information. Welker et al (2008) found that supply partners tend to share

information by means of direct contact instead of advanced ICT usage. Possible explanations are the low level of user knowledge, the high costs associated with implementation, and the possibility that a company configures its ERP system for use in supply transactions linked to simple business conditions rather than for its more complex business situations.

Chiarvesio , Maria and Micelli (2004) have shown in a longitudinal analysis of ICT diffusion within Italian districts that the foreseen convergence between the district economic model and new technologies should not be taken for granted. They observed specific evolutionary paths concerning technology innovation in local systems, which may have implications upon issues of economic policy.

INTERNET IN SMEs

The Internet is viewed as a new way of building and maintaining the relationship between the supplier and buyer, resulting in one-to-one marketing and the building of loyalty via relationship marketing (Zineldin, 2000). Use of Internet poses both strong opportunities and challenges for small businesses globally. Despite the widespread acceptance of internet in corporate environments, the extent of internet use continues to vary widely among small businesses (Sadowski et al., 2002). Kula and Tatoglu (2003) investigated the nature and extent of internet use and the role of firm- and industry-specific by SMEs in an emerging market economy of Turkey, and

found significant differences in (1) amount of resources allocated for export development and (2) international experience of the SME. In general, the SMEs have been found to have a positive attitudes regarding Internet use. The SMEs were found to be of the opinion that the internet will become more attractive in future in terms of enhancing company's image of being an important tool of doing business electronically.

O'Keefe et al. (1998) investigated the strengths and weaknesses of being an early adopter of the Web from a small firm context. They believe that proactive first users of information technology can gain business advantage in the same manner as early market entrants. Certain characteristics of SMEs make them suitable for internet usage. Courtney, (2001) proposed that, flexibility inherent in the small firm is especially suited to the Internet and e-business. Research on problems has tended to focus on external constraints for doing business with little being been done in terms of modelling the process (Katsikeas and Morgan, 1994). Simmons, Armstrong & Durkin (2008) have tried to identify the important role that the small business marketing context plays with in Internet technology adoption.

Though conceptual models depicting the stages involved in the development of Internet systems have appeared in the literature (e.g. CBI and KPMG Consulting, 2001; Earl, 2000; Rayport and Jaworski, 2002) and there have been attempts to identify and describe the different phases that small businesses move through with respect to the sophistication of their use of Internet technologies (e.g. Daniel et al., 2002; Rao et al., 2003), Levy and Powell, (2000) believe that there is little evidence that SMEs follow a 'stages of growth' model for Internet adoption.

Quelch and Klein (1996) see the internet in terms of increasing global exposure, lowering barriers to enter in the form of international advertising costs, adoption of global market niche strategies, reduction of the importance of intermediaries and the internet as a marketing research medium. Hamill and Gregory (1997) investigated the growth of internet marketing by internationalizing small firms, and found that British firms are lagging behind their American counterparts and potentially losing competitive advantage in the international marketplace.

Many researchers have focused on barriers of internet adoption. Wai-Pun etal., (1997) have classified barriers as either technical or social. The former include poor telecommunications structure and security of transactions and the later may relate to lack of trust of the medium, poor knowledge of the medium and insufficient skill in IT, and general lack of awareness of potential opportunities for its use. Other barriers identified include security and privacy worries, costs of consultants and lack of IT competence. The amount of limited resources within the small firm serves as a barrier to e-business adoption (Thong,

2001). The small firm often views cost as a barrier unless they can clearly see a competitive advantage in doing so (Clarke, 1997). Although the majority of small firms in Europe and the USA have access to the Internet, this does not necessarily mean that access is directly related to practice (Hobley, 2001).

Fillis and Wagner (2005) have proposed that psychological barriers can be overcome through increased awareness of internet benefits, operational barriers can be overcome through the use of data transfer of online documentation, organizational problems can be dealt with through the adoption of low-cost market research resources and product and market barriers can also be overcome by online market research and improving customer orientation through online feedback

Internet is particularly useful for SMEs involved in exporting. Though there is a global marketing potential of the internet for exporting SMEs, earlier research (e.g., Hamill and Gregory, 1997) does not distinguish clearly between exporters and non-exporters. Internet serves different roles and purposes within the marketing activities of exporting SMEs. Each may have the capacity to replace or substitute tasks performed by traditional export channel intermediaries. Houghton et al. (2001) and Houghton and Winklhofer (2002) showed that website adoption appeared to be stimulated by assistance from personal contact networks, whilst lack of information technology knowledge acted as an obstacle. Daniel et al., 2002 and

DTI, 2000 report that staff workload, a high level of perceived risk, the importance of augmented product dimensions and compatibility with existing marketing channels are likely to act as obstacles to e-commerce adoption, but higher levels of supplier service, Information Technology knowledge and entrepreneurship stimulate e-commerce adoption.

Levenburh and Dandridge (2000) found marked differences in frequency and type of useage internet among firms by size gradation. More frequent and more sophisticated use of the internet exists by firms with four or more full-time equivalent employees, and firms with intentions for growth in the next six months, including sales change, employment change and export plans. Table 1 summarizes these researches on internet in SMEs.

Table 1 (Page No.96)

WEBSITE ADOPTION

Internet adoption for many small businesses is manifested in websites, which are viewed as providing the most value within an inherently marketing-driven context (Jones et al., 2003; Marcolin et al., 2005; Martin and Matlay, 2003; Pflughoeft et al., 2003; Quinton and Harridge-March, 2003; Raymond, 2001; Rowley, 2004; Sellitto et al., 2003; Sparkes and Thomas, 2001; Standing et al., 1998).

There is a wide ranging evidence to prove importance of small businesses and the opportunities presented by website adoption globally, and therefore it

becomes important to understand the key issues that affect website adoption (Chen et al., 2003; Pfl ughoeft et al., 2003; Raymond, 2001). Website adoption for small businesses is not a standardized process. There could be several reasons for website adoption. Researches have shown that perception of benefits of IT innovations is a reason behind website usage (Poon and Swatman, 1999; Rogers, 1995). Houghton and Winklhofer (2002) believe there are several reasons behind the need to understand what determines website adoption more clearly because first, individual determinants will result in the sophistication and relevance of the website adopted and second, knowledge of the determinants of small business website adoption will assist in more focused efforts to stimulate adoption in small businesses.

With fragmented literature available in relation to what actually determines small business internet and, specifically, website adoption, with no holistic model to guide researchers (Fillis et al., 2003; Pflughoeft et al., 2003), various researchers point out that small business website adoption is not clearly understood, with specific limitations in relation to what determines adoption (Downie, 2003; Fillis et al., 2003; Houghton and Winklhofer, 2002; Martin and Matlay, 2003). In this context, Pflughoeft et al. (2003) believe there is a need for a conceptualization of the determinants of small business website adoption.

Several authors have proposed factors which could affect adoption/nonadoption of websites and e-commerce within

exporting SMEs (e.g., Houghton et al., 2001), or have highlighted the potential effect of website and e-commerce adoption on channel relationships (e.g. Jevons and Gabbott, 2000; Webb, 2002). Frazier (1999) even suggests that manufacturers using a highly selective distribution channel in which the dependence and investment in intermediaries is high, should avoid the use of the internet for e-commerce, and focus upon providing websites with the information on distributor and agent contact details.

Other barriers include finding difficulty with the design and upkeep of websites (Blackburn and Athayde, 2000), together with low expectations of what can be achieved (Poon and Swatman, 1999). Simmons , Armstrong and Durkin (2008) provided an interpretation of what determines small business website adoption by stressing upon the important role that the small business marketing context plays within internet technology adoption.

Various surveys (http://www.gallup.com, http://www.ami-usa.com) have shown that small businesses are establishing Web sites primarily to advertise and promote their business, rather than to conduct e-commerce. They found that SME use the internet to mainly buy, not to sell products (Annual Small Business Survey 2005, http://www.berr.gov.uk/files/file38237.pdf). Among the SMEs with a Web site, only 27 percent are currently selling on the Internet, and these organizations average less than three Web based orders per month (Dun

& Bradstreet's 20th Annual Small Business Survey, http://www.dnb.com, 2001). Scholars have stressed the potential of electronic transaction management, where small and large companies could exploit Websites and electronic markets to carry out exchanges speedily, efficiently and independently from their location (Malone et al., 1989; Bakos, 1998).

Critically, within the website adoption context, the marketing function has been identified as a key driver of website adoption, with websites viewed as essentially marketing tools (Datta et al., 2005; Evans and Mathur, 2005; Jones et al., 2003; Kierzkowski et al., 1996; Marcolin et al., 2005; Martin and Matlay, 2003; Pfl ughoeft et al., 2003; Phippen, 2004; Quinton and Harridge-March, 2003; Rowley, 2004; Sellitto et al., 2003; Teo and Tan, 2002; Varadarajan and Yadav, 2002).

Hoffman and Novak (1997) associated marketing-oriented firm behaviour with the development of a future web-based competitive advantage, due to its ability to provide company access to customer, market and technology intelligence. In the small business context, Jones et al. (2003) argue that a marketing orientation allows them to use their websites to maintain a competitive advantage facilitating customer, market and technological intelligence among other benefits. Further, Martin and Matlay (2003) found that effective website adoption stemmed from small businesses, which recognized the value of websites in terms of their usefulness in the marketing effort, with websites viewed as essential marketing tools. Indeed, Martin and Matlay (2003) found that websites were often effectively used by small businesses to develop stronger and more effective relationships with customers, with attempts to use them in order to change customer perceptions of the firm and its products and services being evident. Vadapalli and Ramamurthy (1997) state that when adopting a technology, firms must perceive the positive effects of the adoption for themselves and their customers if they are to develop effective websites. More specifically, various researchers believe that effective website adoption is linked to perceptions as to its value for marketing purposes (Downie, 2003; Martin and Matlay, 2003; Pfl ughoeft et al., 2003; Quinton and Harridge-March, 2003; Varadarajan and Yadav, 2002).

Specifically, small businesses are particularly constrained by resource factors, and are therefore more sensitive than larger organizations to adoption costs (Lewis and Cockrill, 2002; Van Smith and Webster, 2000). If there are no clear benefits in website adoption, they will still adopt websites that are, however, poorly executed (Jones et al., 2004). Sadowski et al. (2002) warns against over-concentration on perceived costs/barriers as it prevented many small businesses from properly exploring the benefits that could be extracted from website adoption.

In considering the establishment of a website, Barling and Stark (1998) argue

that it does not necessarily assume pre-existing business relationships, but instead makes possible new opportunities with potential customers and business partners. It has been found that for website adoption to be effective there is a need to integrate the online purpose with the overall business purpose. This integrated approach will allow all the competencies for the successful adoption of a website to be integrated and directed in an appropriate direction (Jones et al., 2003; McGowan et al., 2001). It is concluded that having a clear overall purpose for being online is therefore important as a means of focusing companies on what they are hoping to achieve with their websites, which in turn will be an important component within the strategic development determinant in relation to the ultimate websites adopted. Within the small business context, Sadowski et al. (2002) state that these considerations should be related to a clearly developed online business.

Various researchers have recognized cultural problems as key barriers of perception that a small business will have to overcome in order to effectively adopt websites (Chappel and Feindt, 1999; Donovan, 1997; Smith and Webster, 2000; Straeder and Shaw, 2000). Industry culture will impact on small businesses in their adoption of websites (Sadowski et al. (2002) and Fillis and Wagner (2005). Studies have also shown that website adoption levels within an industry sector can directly affect the adoption strategy of small businesses in the same sector (Poon,1998).

In relation to website adoption within the small business context, Subba Rao et al. (2003) proposed a 3 stage model relating to the websites they adopt:

1. Presence (Static Websites);

2. Portals (Interactive Websites);

3. Transactions Integration (Interactive / Transactional Websites)

Table 2 summarizes the researches on website adoption in SMEs.

Table 2 (Page No.96)

OTHER ISSUES

a) Virtual teams

Matlay and Westhead (2005) focuses upon the emergence of Virtual Teams that increasingly form the competitive core of successful entrepreneurship in Europe and identified the stages and processes specific to Virtual Teams, from formation to the fulfilment or adjournment of specific tasks and projects and advantages and disadvantages of Virtual Teams

b) Business Process Reengineering

Certain studies have stressed firms' opportunities to redesign processes and business organisations through electronic networks on a world-wide scale (e.g. Scott Morton, 1991; Tapscott,

1996)

c) Knowledge Management

The OECD (2001) found that merely 13% (of SMEs) have formalized strategies for their knowledge management and Holm (2002) found that up to 79% (of SMEs) do not have any action plans with respect to knowledge management. (Holm and Poufelt, 2003) revealed that small firms do indeed manage knowledge informally as part of their normal activities, without the use of the terminology and concepts of KM. However, contrary to expectations, on occasion some also engage in formal KM. Very often it is associated with the introduction of new Information and Communications Technology (ICT) systems, such as intranets and knowledge capture or sharing systems, for example. It is also characterized by the creation of new KM structures, and new management roles with appropriate labels such as Chief Knowledge Officer (Redoli, García-Díez and López-Coronado (2008).

d) Electronic Data Interchange

Iacovou et al. (1995) studied the factors influencing the adoption of Electronic Data Interchange (EDI). Among the factors included were perceived benefits, organizational readiness, and external pressure. Kuan and Chau (2001) determined the factors influencing the adoption of EDI in small businesses using a technology, organization, environment framework. The technology factor as in Iacovou's 1995 study incorporated perceived direct and indirect benefits of EDI. The organization factor consisted of perceived financial cost and perceived technical competence. The environment factor included a new variable: perceived government pressure.

e) Towards optimizing assimilation of ICT in SME

Many researchers have offered suggestions based on their researches to improve and optimize the assimilation of ICT in various SME operations.

For the growth of SMEs, Poon (1998) identifies the importance of the interplay between market conditions, supply chain issues, industry characteristics, particular style of management, innovation ability and entrepreneurial thinking. Jones et al. (2003) develop a stage model of Web-based commerce adoption. Lohrke et al. (2006) highlighted the benefits of reducing an SME's transaction costs. (Gupta, 2007) proposed that cooperative model of learning can make enterprise more competitive.

Initiatives like The "VIKAS" Project in India (collaboration between NMCC and Microsoft India) which aims at stimulation ICT absorption in the manufacturing sector may be a positive

step in that direction. (http://www. projectvikas.com).

Business process re-engineering (BPR) is recognized as a means of either improving efficiency or of enabling full value-added changes to be achieved within the small- and medium-sized enterprises (Levy and Powell 2005).

Wong & Lu (2005) identified the key factors of successful computerization in SMEs which include focus on allocating their limited resources in implementing information systems efficiently, Setting a good plan is a critical step and the success of information systems strongly depends on external information technology expertise, the cost incurred to improve the environment within an enterprise for implementing information systems (should deserve more concerns than the money directly invested), and the support from chief executive officers. SME take up of e-business is different to that of large firms. The implication is a need for a contingent, SME characteristic-based approach to determining how SMEs employ ICT, rather than a 'one size fits all' solution. Thus the usefulness of some of the e-business models for SMEs that have been reviewed here is not clear.

A multidisciplinary review of current e-business models by Zheng et al (2004) found they were derived from, and most suitable to a large firm perspective and concluded that a contingent approach is needed, which is informed by managerial trade offs, risk as experienced by SMEs and recognition of the static nature of markets. Bhattarai suggests that

competitiveness of SMEs in Emergent Business Environment may be increased by price restructuring, customized services to IT product/ service users, cultural and intellectual shifts, among other measures. Managers need to align ICT adoption and the strategic focus of the firm more consistently (Bayo-Moriones, Lera-López 2007).

Poon and Swatman (1999) identify the importance of entrepreneurship and managerial support as the way in which sustainable advantage can be obtained. e-business competitive advantage can be achieved through the exploitation of relevant hard and soft competencies, selected from a wider portfolio of relevant skills. Competitive advantage is achieved by thinking entrepreneurially about e-business issues (Fillis and Wagner 2005).

As the small firm moves from traditional business to e-business, this must be accompanied by the development of appropriate knowledge and competence among the employees. The internal competencies of the organization are central to efficient production of products and services through the construction of profitable relationships with customers (Schuppel et al., 1998). The small firms grows through the ability to exploit its internal knowledge competencies and the entrepreneurial small firm is best placed to do so with its higher levels of creative thinking (Blackler, 1995). So, there is a need to view SME e-business development in terms of how well the owner-manager and related key decision makers can develop and exploit an

appropriately built competency portfolio (Fillis and Wagner 2005).

CONCLUSION

Researches have identified SMEs as a driver in boosting the economy of a country. Adoption of ICT in SMEs is still low, particularly in developing countries. There are a number of factors that affect the decision of owner-managers of these enterprises to adopt ICT. Researches till the recent past explored various dimensions of application of ICT in big firms only, but now researchers have begun to explore the implications of adoption of ICT for small firms also. They have tried to identify the barriers to successful adoption and have developed and critically analysed various business models. The most explored research theme seems to be Internet and website adoption. A considerable research has also been done for the role of ICT in effective supply chain management in these firms. The review of existing literature in the area of ICT and SME reveals that there are still a few aspects that need attention of researchers. These include management of human resource in SMEs in ICT enabled small firms, inter-firm interactions to reap synergies in global context, innovation in SMEs in the changed business environment, a descriptive approach in offering alternatives for overcoming barriers and Total Quality Management in SMEs, amongst others.

For a global market, IT adoption seems to have become the minimum requirement for survival in the SME sector. An integrated approach to ICT is required that will result in effective use of technology while bringing the opportunity cost to its minimum.

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Table 1: A summary of researches on adoption of Internet in SMEs

Area of research	Authors
Nature and extent of usage	Levenburh and Dandridge (2000); Sadowski et al. (2002). Kula, Tatoglu, (2003)
Factors affecting Internet adoption	Kula, Tatoglu (2003)
Benefits	Zineldin (2000); O'Keefe et al. (1998); Quelch and Klein (1996)
small business marketing context within Internet technology adoption.	Simmons, Armstrong & Durkin (2008); Hamill and Gregory (1997)
Stages of internet adoption	CBI and KPMG Consulting (2001; Earl (2000); Rayport and Jaworski (2002); Daniel et al. (2002); Rao et al. (2003); Levy and Powell, (2003)
Factors affecting adoption	Wai-Pun etal., (1997); Clarke, 1997; Houghton et al. (2001) and Houghton and Winklhofer (2002); Daniel et al. (2002); DTI (2000)

Table 2 : Research on website theme in SMEs

Themes	Authors
Resource factors	Lewis and Cockrill (2002); Van Smith and Webster (2000)
Conditions for establishing website	Barling and Stark (1998); Jones et al. (2003); McGowan et al. (2001); Sadowski et al. (2002); Jones et al. (2004).
Models of adoption	Subba Rao et al. (2003);
Impact of industry trends	Poon (1998); Sadowski et al. (2002) and Fillis and Wagner (2005)
Factors in adoption of website	Chappel and Feindt (1999); Donovan, (1997); Smith and Webster (2000); Straeder and Shaw (2000); Sadowski et al. (2002); Houghton et al. (2001); Chen et al., (2003); Pfl ughoeft et al. (2003); Raymond, (2001); Poon and Swatman (1999); Rogers (1995)
Marketing function as a driver in adoption	Datta et al. (2005); Evans and Mathur, (2005); Jones et al. (2003); Kierzkowski et al., (1996); Marcolin et al., (2005); Martin and Matlay, (2003); Pfl ughoeft et al., (2003); Phippen (2004); Quinton and Harridge-March, (2003); Rowley (2004); Sellitto et al. (2003); Teo and Tan, (2002); Varadarajan and Yadav, (2002); Hoffman and Novak (1997), Jones et al. (2003); Martin and Matlay (2003); Downie (2003); Martin and Matlay (2003); Pfl ughoeft et al. (2003); Quinton and Harridge-March (2003); Simmons, Armstrong , Durkin (2008); (http://www.gallup.com, http://www.ami-usa.com); (http://www.dnb.com (http://www. businesssurvival. com/reports/Verizonsurvey.html).
Customers as driver	Martin and Matlay (2003); Vadapalli and Ramamurthy (1997)
Benefits	Malone et al. (1989); Bakos (1998).
Barriers	Blackburn and Athayde, (2000); Poon and Swatman (1999)
Identification of lack of adequate research	Fillis et al. (2003); Pfl ughoeft et al.(2003); Downie (2003); Houghton and Winklhofer, (2002); Martin and Matlay (2003); Pfl ughoeft et al. (2003)
Impact of website adoption	Jevons and Gabbott (2000); Webb (2002).

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