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Editor's Desk

As a policy guideline, the wholly-owned subsidiary (WOS) of foreign banks have been permitted by the Reserve Bank of India to acquire domestic private banks and also to set up branches anywhere in India. The foreign bank subsidiaries can also be listed on the local stock exchanges. As a rider, the subsidiaries of the foreign banks will not be allowed to hold more than 74 % sectoral cap for overall foreign investment in the private banks which may be acquired. The WOSs will be given near national treatment as a locally incorporated bank to enable them to open branches anywhere in India on par with Indian banks, barring in certain sensitive areas where the RBI's prior approval would be essential. The Indian banking industry is one of the best regulated industries in the world having multiple regulatory bodies, monitoring the working of the banks. In order to provide safeguards against the possibility of our banking industry being dominated by foreign banking institutions, the new framework devised by RBI has certain measures to control & contain the expansion of foreign banks if their share exceeds a critical size. The policy stipulates that the priority sector lending requirement would be 40% for WOS similar to domestic scheduled commercial banks, which is a welcome step for the development of the much needed sectors requiring financial support.

The growth of banking industry especially after liberalization in India has been exponential and there is a wide scope in further growth and the move by RBI to allow foreign banks to expand their reach in India may further boost many sectors. However, a caution needs to be exercised to ensure that the aggressive marketing and the operational strategies of foreign banks do not lead to detrimental effect on the working of our well regulated banking industry, the saving community and the business community at large. The Indian banking industry has over the years witnessed the acquisition of some smaller banks by the bigger banks which is healthy for a developing economy like India. This current move by RBI may give a boost to the high growth banking sector.

(Ravi K. Dhar)

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EMPLOYEE ATTRITION: EXPLORING THE DIMENSIONS IN THE URBAN CENTRIC INDIAN BPO INDUSTRY

R. Sivarethinamohan★ P. Aranganathan★★

Business Process Outsourcing Industry in India faces a very serious problem of employee attrition. The attrition rate as high as 55% which lead to higher costs to the company. Employee attrition causes huge loss to the company, not only in terms of manpower but also in monetary terms and hence there is a need for tackling the problem of attrition in the BPO industry. Attrition may significantly get reduced when the negative characteristics of the job are properly addressed by the organizations. However, that does not really mean that the employees increase their willingness to stay in the same organization. Thus different set of factors are emerging for employee attrition and retention in the organizations. Hence this research was conducted among the employees working in various BPOs in Chennai metropolitan city, India, with an aim to explore the significant factors that cause employee attrition which may help the organizations to develop retention strategies.

I. Introduction

Over the past five years, the Indian BPO/ITES sector has been growing at a rate of about 50-60%. The Indian outsourcing sector directly employs 2.54 million workers and accounts for 6.4% of the country's Gross Domestic Product (GDP). However, Indian BPO industry faces some challenges that are quite varied unlike other industries. The major challenges being faced by the BPO industry in India can be classified into internal and external challenges. The major internal challenges include shortage of competent managers for the middle and senior management and the high employee attrition rates. The major external challenge is in the form of opposition from the US politicians and the UK labor unions against shifting of the BPO operations by local companies to India and also competitors such as Mexico, Philippines, Malaysia, China, Canada and Ireland. India recently lost its crown to the Philippines as the call centre capital of the world. Yet, India continues to lead the overall global outsourcing market, increasing its share to 55% in 2010, up from 51% the previous year.

One of the most significant internal challenges is high employee attrition rates. Attrition refers to a gradual, natural reduction in membership or personnel, as through retirement, resignation, or death (National Performance Review 1997). According to Mehta et al. (2006), of all the challenges posed to BPO organizations at various levels, attrition, absenteeism and motivating employees are the major ones that dominate at the middle level. As per NASSCOM (2004) report, the outsourcing industry would

have a shortage of 262,000 professionals by 2012. Despite potential for tremendous growth, BPO industry continues to suffer from high level of attrition stemming from factors like high levels of stress and lack of opportunities for growth. An average Indian call center employee stays with a company for 11 months, where as an average UK call center employee stays for 3 years. Between December 2010 and April 2011, the attrition rate in the Indian BPO industry increased to 55% from 40% during the same period a year earlier (Assocham).

Statement of the problem:

BPO industry in India faces critical problem of high 55% employee attrition rate which leads to higher costs to the company. Attrition causes huge loss to the company, not only in terms of manpower but also in monetary terms. The high attrition costs increases the costs to the organization considerably. The higher the number of people leaving an organization, the higher the drain on the company's resources like recruitment expenses, training and orientation resources and time. The high attrition rate also affects productivity of the organization. There is a need of tackling the problem of attrition in the BPO industry of India and for this employee motivation has been chosen as an effective tool. Generally attrition may reduce if the

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negative characteristics of the job are taken care of. However, that does not mean that employees increase their willingness to stay in the same organization. Thus different set of factors emerged for attrition and retention respectively. Hence this research was conducted among the employees working in various BPOs with an aim to explore the significant factors that cause employee attrition which may help the organizations to develop retention strategies.

II. Review of Literature

Attrition is defined as a reduction in the number of employees through retirement, resignation or death and attrition rate is defined as the rate of shrinkage in size or number (BPO India 2009). Attrition of employees in a limited measure is desirable for influx of new ideas in any type of organization. It helps organizations to maintain their agility in a fast changing environment. It brings in new blood, opens up new vistas for change, development and improvement, shows avenues to expand operations and adds to the creative lines of the organizations. Attrition in a limited measure can thus bring gains to the organization.

An individual's behavioral intention to stay with the organization, is a direct outcome of company policies, labor market characteristics, and employee perception. Intention to leave is negatively related to continuance commitment and is a widely agreed upon precursor to turnover (Mobley et. al., 1979).

Inside a BPO organization, HR related issues arising at all levels have become significantly alarming and need to be addressed soon. Major HR-related issues standing as problems in the various levels of management include attrition, HR policies, absenteeism, performance appraisal, and manpower allocation (Mehta et al. 2006). In organizing, the major concerns at the lower management level are related to job design and job requirements, like night shifts, monotony, and long hours. At the middle-management level, critical issues were related to HR, organizing, and motivation. Middle-level managers have difficulty retaining good employees, motivating them to put in their best effort, and keeping them happy. Often managers are not trained to work with teams and directing and motivating numerous teams simultaneously is challenging (Mehta et al 2006). Besides this, BPO employees are experiencing problems related to stress, sexual and racial abuse, and dissatisfaction at work (Walletwatch, 2003; Cacanans, 2004; Singh, 2005b; Witt et al., 2004; Rose and Wright, 2005; Houlihan, 2002).

Attrition in the BPO industry is two fold. One part of the attrition is where the employee leaves the industry entirely.

The other section of attrition is where the employee joins another firm in the industry. Both the sections have separate reasons which need to be identified. The primary reason for people leaving the industry is due to the fact that the industry is viewed as a gap filler occupation. There seems to be a flaw in the way the industry is structured. The industry has been mainly dependent on youth who take out time to work, make money in the process while thinking of career alternatives. Hence for this group BPO is never a long term career but only as a part time job. The easy availability of BPO jobs is a source of easy money till the time there is no other source of funds. Also the unfriendly working conditions, late night work shifts, high tension jobs act as a deterrent for people to stick to this industry for long time. In addition, the BPO jobs are not being taken with a positive spirit by the society on a large. Research says that nearly 50 per cent of those who quit leave the industry (Prakash and Chowdhury 2004).

Objectives of the Study

The specific objectives of this study are as follows:

1. To study the socio demographic characteristics of the respondents employed in BPOs located in Chennai city, India.
2. To explore and analyze the dimensions of attrition in BPO organizations located in Chennai city, India based on primary data collected from field survey.

III. Research Methodology

This research study is empirical in nature. The study was done among the 90 employees belonging to various designations in the organization such as trade officers, senior officers, Team leaders, Associate managers and Managers during one of the shifts (day shift) employed in various BPOs in Chennai City, Tamilnadu, India. Variables are not directly observable; hence, a questionnaire with five scale ratings was used to measure perception of respondents. The secondary data was collected from the various sources like books, magazines, journals, dailies, websites, books, etc.

Pretest: The questionnaire was pre tested on 10 managers. Owing to the intrusive nature of the questions, the researcher was hesitant about the validity of the response. However, the respondents answered the questions without any trouble; minor changes were made in the questionnaire such as reducing the number of questions.

Respondents:

The best subjects for the study were employees working

for BPO organizations. The subjects were informed in advance about the purpose of the study. The human resources heads were requested to permit the research team to personally administer the questionnaire in their respective organizations. The research team assured the respondents that the data would be confidential and only the statistical inferences would be published without stating the company name. Out of 110 questionnaires distributed, about 90 questionnaires were found useable for analysis. (see Table -5.1 for demographic details of the sample).

It is observed from Table-1 that 36.26 percent of the respondents are Trade officers, 34.4 percent of respondents are Senior Officers, 16.7 percent are Team leaders, 10 percent are Associate Managers and only 3.3 percent are Managers. 45.6 percent of respondents belong to the age of 25 to 30 years, 40 percent of them belong to the age below 25 years, 12.2 percent of respondents belong to the age group of 31 to 40 years and only 2.2 percent of the respondents are above 40 years. 55.6 percent of the respondents are males and the remaining 44.4 percent of respondents are females. 58.9 percent of the respondents are unmarried and the remaining 41.1 percent of the respondents are married. 44.4 percent of the respondents are under graduates, about 35.6 percent of the respondents are post graduates, about 14.4 of the respondents had professional degrees and about 5.6 percent of the respondents are diploma holders. 54.4 percent of the respondents possess an experience of one to three years, about 28.9 percent of the respondents possess an experience of four to six years, about 8.9 percent of the respondents possess an experience below one year and about 7.8 percent of the respondents possess an experience of more than six years in their present company.

IV. Analysis & Interpretation

Statistical Tools Used: Data was summarized and subjected to statistical analysis using SPSS (Statistical Package for Social Sciences) 16 version.

Mean, Standard Deviation and Rank of Variables

Table-6.1 summarizes the mean score value, standard deviation and relative rank of all the 36 variables used for the study. The variable 'Smooth relationship with colleagues' received the highest mean score among the other variables and hence it is ranked first among the other variables. The variables 'Work on unnecessary tasks' and 'Comfortable to work in night shifts' received the lowest mean score among other variables and hence it is ranked last. The variable 'Will look for new job in the next year;

got the largest standard deviation among all the other variables.

V. Results of Factor Analysis

The data was subjected to factor analysis by using SPSS Version 16.0. As the factor structure of the questionnaire was not clearly hypothesized, and it was the main aim of the study to explore the structure, an exploratory factor analysis with Varimax rotation was carried out to identify few coherent factors.

Preliminary Analysis

The preliminary analysis shows an abridged version of R-matrix. The top half of this table contains the Pearson correlation coefficient between all pairs of questions whereas the bottom half contains the one tailed significance of these coefficients. This matrix can be used to check the pattern of relationships. Since the determinant value listed down at the bottom of the matrix for this data 0.029 is greater than the necessary value of 0.00001, multicollinearity is not a problem for these data. Since all the SAQ correlate well and none of the correlation coefficients are particularly large, there is no need to eliminate any questions at this stage.

KMO and Bartlett's Test

The table-6.2.1 shows the Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett's test for sphericity. Kaiser recommends accepting values greater than 0.5 as acceptable. Since the value is 0.659, it is an acceptable value and hence we are confident that factor analysis could be appropriate for these data. The Bartlett's test for sphericity is significant ($p < 0$), and therefore factor analysis is appropriate for these data.

Factor Extraction:

The table-6.2.2 lists the Eigen values associated with each linear component before extraction, after extraction and after rotation. Before extraction, 36 linear components within the data set. The components having Eigen values greater than 1 are selected and hence the first nine factors which receive the value greater than 1 receive more amount of variance. i.e 72.735 %. After rotation the relative importance of the nine factors are equalized. Before rotation, factor 1 accounted for more variance than the other four (28.140 % compared to 9.856, 7.012, 7.012, 6.688, 5.349, 4.959, 4.106, 3.483 and 3.142 %), however after extraction it accounts for only 12.296 % of variance (compared to 9.348, 9.253, 9.020, 8.715, 8.592, 6.106, 4.925 and 4.479 % respectively).

The Table-6.2.3 shows the communalities before and after extraction. Principal component analysis works on the initial assumption that all variance is common and hence all communalities before extraction are 1. The Table-6.2.4 shows the component matrix before rotation. At this stage 9 factors are extracted and the loadings above 0.4 are alone displayed. The average communalities is 0.645 and some values exceed 0.7. Since number of variables is 36 and communalities after extraction are greater than 0.7, Kaiser's criterion cannot be accurate.

Kaiser's criterion: If there are less than 30 variables and communalities after extraction are greater than 0.7 or if the sample size exceeds 250 and the average communality is greater than 0.6 then retain all factors with Eigen value above 1.

Hence we use the Scree Plot to decide whether all the nine factors can be considered for the next stage. Figure-6.1 shows the Scree Plot curve which is again quite difficult to interpret because the curve begins to tail off after seven factors, but there is another drop after nine factors before a stable plateau is reached. Therefore, we could justify retaining either seven or nine factors for the further analysis.

Factor Rotation:

The table-6.2.5 is rotated component matrix which displays only factor loadings above 0.4. When the rotated matrix is compared with unrotated solution, we infer that there are nine factors and variables load highly onto one factor.

Interpretation and Implications

The last step is to identify the items that load on to the same factor. The item with the higher loading on factor 1 is variable 15 (Smooth relationship with supervisor), for factor 2 is variable 5 (Opportunities to learn and grow), for factor 3 is variable 7 (Receive sufficient training and training materials), for factor 4 is variable 24 (Contribute different capabilities to my company), for factor 5 is variable 1 (Good salary Package), for factor 6 is variable 30 (Receive incomplete requests from two or more people), for factor 7 is variable 27 (Comfortable to work in night shifts), for factor 8 is variable 19 (Smooth relationship with colleagues), and for factor 9 is variable 32 (Certain about my authorities). Table 6.2.6 shows the extracted factors from the group of variables. It is evident from the table-6.2.6 that the Factor 'Deprived supervision' ranks first among the other factors that affect the attrition rate among the employees.

Factors Extracted: The nine factors extracted after rotation

are explained as follows in order.

1. Deprived Supervision : Factor I which consists of the variables 15,16,17,18 and 12 is named as Deprived Supervision. A supervisor who does not exhibit strong leadership skills or gives the appearance of not considering the best interest of her subordinates can also create frustration among the employees which may lead them to look for new opportunities.

2. Low career Growth: Factor 2 which consists of the variables 5, 6 and 2 is named as Low career Growth. Employees decide to leave the organizations once they realise that there are only few growth and advancement opportunities. Many employees try to quit the organizations when there is a mismatch between the job and person.

3. Poor training and Unfavorable working conditions: Factor 3 which consists of the variables 7, 10, 8, 4, 13 and 9 is named as Poor training and Unfavorable working conditions. New employees who lack proper training may face difficulty in developing the skills to do the job effectively. This may eventually lead to their termination or they may leave voluntarily out of frustration. Organizations implementing significant changes also experience turnover if they do not provide adequate training on the new policies and procedures. Also the organizations must ensure favorable working conditions by providing them proper infrastructure, facilities, technology, equipment etc to improve their quality of work life.

4. Lack of skill variety: Factor 4 which consists of the variables 24,22,25,21 and 20 is named as Lack of skill variety. In case the employees are not allowed to contribute different capabilities and their full capacity and potential to the company, they decide to look for the next opportunities. Even the employees leave the organizations when they do not possess the abilities to achieve their goals along with organizational goals.

5. Good salary expectations & turnover intention: Factor 5 which consists of the variables 1, 35,3,36 and 28 is named as Good salary expectations & turnover intention. Low pay is one of the primary reasons of high employee turnover. In case the family members of the employees are not comfortable with their work schedules, the employees start looking for new opportunities.

6. Low Self-Fulfillment Factors: Component 6 which consists of the variables 30, 34, 23, 31, and 14 is named as Low Self-Fulfillment Factors. If employees receive incomplete requests from two or more people and when they get frustrated when executing job responsibilities, the

employee decide to move out of the organization. Also when they feel that they work on unnecessary tasks and if they do not perceive much prospects for the future in the organizations they quit. And when they feel that they are shown Discrimination or harassed in the working environment they decide to leave the organization.

7. Substandard Nature of Job: Component 6 which consists of the variables 29, 11, 27 and 26 is named as Substandard Nature of Job. Circumvent rules/policies to complete assignments, Comfortable with monotonous nature of job, Comfortable to work in night shifts, willing to work extra hours, willing to work extra hours

8. Dissatisfaction with colleagues: Component 6 which consists of the variables 19 and 33 is named as Dissatisfaction with colleagues. If the relationship among colleagues is very poor then the employees would be demotivated which would further result in employee turnover. Relationship among the employees plays a major role in providing good environment.

9. Lack of Authority: Component 6 which consists of the variable 32 is named as Lack of Authority. As employees grow experience, they expect authority along with proper responsibilities. If they are not provided with proper authority, they it may result in poor motivation and attrition.

VII. Conclusion

To retain the valuable assets is one of the surest ways to build an organization rather than to just go in global markets and this is the only way an organization can lower its attrition rates. It is inferred from the present study that the factors influencing overall attrition in BPOs are Deprived Supervision, Low career Growth, Poor training and Unfavorable working conditions, Lack of skill variety, Good salary expectations & turnover intention, Low Self-Fulfillment Factors, Substandard Nature of Job, Dissatisfaction with colleagues and Lack of Authority. Also in the present study, it is found that nearly one fourth of the employees are thinking about quitting their present job while another one fourth of the employees are confused whether to continue or quit the present job. Also one fourth of the employees are planning to look for better prospects in the coming year.

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Table 5.1 : Sample Profile (figures in %)

1	Age group in years (respondents in %)	Below 25 Years 40%	25 to 30 Years 45.6%	31 to 40 Years 12.2%	Above 40 Years 2.2%	
2	Qualification (respondents in %)	Professional Degree 4.4%	Post Graduation 35.6%	Under Graduation 44.4%	Diploma 5.6%	
3	Work experience in years (respondents in %)	Below 1 Year 8.9%	1 to 3 Years 54.4%	4 to 6 Years 28.9%	More than 6 Years 7.8%	
4	Gender (respondents in %)	Male 55.6%			Female 44.4%	
5	Designation	Manager 3.3%	Associate Manager 10.0%	Team Leader 16.7%	Senior Officer 34.4%	Trade Officer 35.6%
6	Marital status	Married 41.1%			Unmarried 58.9%	

Table- 6.1.1 Mean, Standard Deviation and Rank of Variables

S.No.	Variables	Mean	Std. Deviation	Rank
1	Attractive salary	3.3778	1.00087	20
2	Good fringe benefits	3.2667	.99210	23
3	Compensation reflects my efforts	3.1444	.98939	25
4	Cannot earn this much elsewhere	2.4667	1.04074	31
5	Opportunities to learn and grow	4.0333	.77096	6
6	Work profile match capacities	3.8333	.73820	12
7	Receive sufficient training	3.8333	.85130	12
8	Access to internal job postings	3.5000	1.09391	19
9	Friendly and cooperative work environment	3.6556	1.00740	15
10	Job security	3.9444	.78413	7
11	Comfortable with monotonous nature of job	3.5778	.94783	18
12	Schedule/flexible rating	3.8778	.76184	11
13	Infrastructure rating	4.0556	.78413	5
14	Discrimination/harassment	2.1798	1.14378	34
15	Smooth relationship with supervisor	4.0889	.77379	4
16	supervisor stimulates me to do my best	4.1000	.71971	3
17	Supervisor appreciates my efforts	3.9333	.81833	8
18	superior is fair minded	3.7667	.75028	14
19	Smooth relationship with colleagues	4.3556	.58657	1
20	Use my full capacity and potential	3.9222	.83770	9
21	Rewarded for significant contributions	3.3444	1.01849	21
22	My services are very important and crucial for my organization's success	3.9222	.78221	9
23	Frustrated when executing job responsibilities	2.5000	1.22015	30
24	I contribute different capabilities to my company	3.6333	1.01062	16
25	Posses abilities to achieve goals	3.6222	.86865	17
26	Willing to work extra hours	2.9444	1.30135	27
27	Comfortable to work in night shifts	2.1556	1.37319	35
28	Family members comfortable with my work schedule	3.1222	1.05817	26
29	I circumvent rules/policies to complete assignments	3.2667	1.05788	23
30	Receive incomplete requests from two or more people	2.4000	1.08927	33
31	Work on unnecessary tasks	2.1556	1.04839	35
32	Certain about my authorities	3.2778	.89978	22
33	Know my responsibilities	4.2333	.68777	2
34	Do not see much prospects for the future in the future	2.6556	1.29095	28
35	Will look for new job in the next year	2.6444	1.38460	29
36	Often thinking about quitting my presenting job	2.4333	1.38247	32

Table 6.2.1: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.659
Bartlett's Test of Sphericity Approx. Chi-Square	2.385E3
Df	630
Sig.	.000

TABLE-6.2.2 Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.130	28.140	28.140	10.130	28.140	28.140	4.427	12.296	12.296
2	3.548	9.856	37.996	3.548	9.856	37.996	3.365	9.348	21.645
3	2.524	7.012	45.009	2.524	7.012	45.009	3.331	9.253	30.898
4	2.408	6.688	51.696	2.408	6.688	51.696	3.247	9.020	39.918
5	1.926	5.349	57.045	1.926	5.349	57.045	3.137	8.715	48.633
6	1.785	4.959	62.004	1.785	4.959	62.004	3.093	8.592	57.225
7	1.478	4.106	66.110	1.478	4.106	66.110	2.198	6.106	63.331
8	1.254	3.483	69.593	1.254	3.483	69.593	1.773	4.925	68.256
9	1.131	3.142	72.735	1.131	3.142	72.735	1.613	4.479	72.735
10	.962	2.673	75.408						
11	.939	2.608	78.016						
12	.856	2.377	80.393						
13	.769	2.135	82.528						
14	.745	2.069	84.597						
15	.676	1.877	86.474						
16	.622	1.729	88.202						
17	.593	1.648	89.851						
18	.476	1.322	91.173						
19	.387	1.076	92.249						
20	.371	1.030	93.279						
21	.345	.959	94.238						
22	.294	.816	95.054						
23	.285	.792	95.846						
24	.247	.687	96.533						
25	.226	.629	97.162						
26	.179	.496	97.658						
27	.162	.449	98.106						
28	.143	.398	98.504						
29	.121	.337	98.841						
30	.090	.251	99.092						
31	.084	.232	99.324						
32	.070	.194	99.517						
33	.057	.157	99.675						
34	.045	.125	99.799						
35	.041	.113	99.913						
36	.031	.087	100.000						

Table- 6.2.3 Communalities

Communalities			Communalities		
	Initial	Extraction		Initial	Extraction
VAR00001	1.000	.848	VAR00019	1.000	.760
VAR00002	1.000	.675	VAR00020	1.000	.688
VAR00003	1.000	.726	VAR00021	1.000	.753
VAR00004	1.000	.767	VAR00022	1.000	.691
VAR00005	1.000	.698	VAR00023	1.000	.808
VAR00006	1.000	.638	VAR00024	1.000	.842
VAR00007	1.000	.640	VAR00025	1.000	.721
VAR00008	1.000	.658	VAR00026	1.000	.718
VAR00009	1.000	.621	VAR00027	1.000	.679
VAR00010	1.000	.660	VAR00028	1.000	.699
VAR00011	1.000	.728	VAR00029	1.000	.712
VAR00012	1.000	.611	VAR00030	1.000	.706
VAR00013	1.000	.741	VAR00031	1.000	.652
VAR00014	1.000	.787	VAR00032	1.000	.709
VAR00015	1.000	.886	VAR00033	1.000	.654
VAR00016	1.000	.833	VAR00034	1.000	.704
VAR00017	1.000	.803	VAR00035	1.000	.810
VAR00018	1.000	.818	VAR00036	1.000	.742

Table-6.2.4 Component Matrix

	Component								
	1	2	3	4	5	6	7	8	9
VAR00015	.889								
VAR00016	.835								
VAR00017	.794								
VAR00018	.674	.419							
VAR00012	.582								
VAR00029	.489						.488		
VAR00005		.753							
VAR00006		.635							
VAR00011		.628					.446		
VAR00002		.615							
VAR00007			.749						
VAR00010			.636						
VAR00008			.615						
VAR00004			.570						
VAR00013			.522						
VAR00009			.465						
VAR00024				.835					
VAR00022				.733					
VAR00025				.643					
VAR00021		.468	.408	.494					
VAR00020				.455					
VAR00001					.828				
VAR00035					-.708				
VAR00003					.660				
VAR00036					-.607	.475			
VAR00028					.458				.430
VAR00030						.735			
VAR00034	-.414					.653			
VAR00023						.652			-.401
VAR00031						.644			
VAR00014		-.547				.563			
VAR00027							.743		
VAR00026		.423					.612		
VAR00019									.841
VAR00033			.408					.484	
VAR00032									.752

Table- 6.2.6 Factors Extracted

Factor No.	Variable No.	Variables	Factors
1	15	Smooth relationship with supervisor	Deprived Supervision
	16	supervisor stimulates me to do my best	
	17	Supervisor appreciates my efforts	
	18	superior is fair minded	
	12	Schedule/flexibility	
2	5	Opportunities to learn and grow	Low career Growth
	6	Work profile synchronize with my capabilities	
	2	Good fringe benefits	
3	7	Receive sufficient training and training materials	Poor training and Unfavorable working conditions
	10	Job security	
	8	Access to internal job postings	
	4	Can't team this much else where	
	13	Equipment/Infrastructure	
	9	Friendly and cooperative work environment	
4	24	Contribute different capabilities to my company	Lack of skill variety
	21	Rewarded for significant contributions	
	20	Use my full capacity and potential	
	22	Services are important and crucial for organization's success	
	25	Posses abilities to achieve goals	
5	1	Good salary Package	Good salary expectations & turnover intention
	35	Will look for new job in the next year	
	3	Fair compensation	
	36	Often thinking about quitting my presenting job	
	28	Family members comfortable with my work schedule	
6	30	Receive incomplete requests from two or more people	Low Self-Fulfillment Factors
	34	Do not see much prospects for the future in the future	
	23	Frustrated when executing job responsibilities	
	31	Work on unnecessary tasks	
	14	Discrimination/harassment	
7	29	circumvent rules/policies to complete assignments	Substandard Nature of Job
	11	Comfortable with monotonous nature of job	
	27	Comfortable to work in night shifts	
	26	Willing to work extra hours	
8	19	Smooth relationship with colleagues	Dissatisfaction with colleagues
	33	Know my responsibilities	
9	32	Certain about my authorities	Lack of Authority

IMPACT OF SELECT ANTECEDENTS ON THE STRAIN DIMENSION OF ROLE CONFLICT

B. Aiswarya★ G. Ramasundaram★★

Work and family are the two central domains forming the back bone of an individual's life. They are work domain (employment) and non-work domain (family). These two inevitable institutions namely work and family have historically coexisted, simultaneously as discrete spheres in one's life. There has been an accelerated influx of women into paid employment roles in the recent past. The article deals with the select antecedents and its influence on the strain dimension of role conflict is analyzed in the study. A sample size of 598 was taken for the study and result has been obtained using statistical analysis.

I. Introduction

The traditional nuclear family where the husband works outside and the wife cares for the home and children is the system which no longer applies to majority of families in the recent few decades (Bond, Golinsky, and Swanberg., 1997). The acquisition of a role requires an individual to take personal as well as the formal expectations of a specified role or position. Although more women are working outside the home than ever before, in home division also the labour is more than equal now than in the past (Barnett and Hyde, 2001). Though working mothers are still expected to be responsible for the majority of household and child care (Riggs, 1998).

The social belief that women should work and care for their families often conflicts with the limited choices and social realities that women face (Covin and Brush, 1991). Work responsibilities and family obligations compete for time and attention of most working adults. Successfully negotiating the interface of these life domains is challenging.

About the Industry

The Indian Information technology and Business Processing Outsourcing (IT-BPO) Industry has emerged as the largest private sector employer in the country, with direct employment of 2.23 million professionals and indirect employment of over eight million people in different industry sectors. While the percentage of women in the IT-BPO workforce at the entry level is commensurate with graduate profiles, anecdotal evidence suggests that this is not the case at middle and senior management positions. With the required skill sets and designations in the organizational hierarchy women contribute significantly to the success of companies and the IT-BPO industry as a whole.

The IT-ITES industry's contribution to the national GDP is estimated to increase from 6.0 per cent in 2008 - 09 to 6.1 per cent in 2009-10. The total number of IT and ITES -BPO professionals employed in India have grown from 0.52 million in 2001- 02 to 2.10 million in 2008 - 09. In addition, about one fifth of the female employees in the IT-BPO industry are at the managerial level or above indicating the numerous opportunities provided to them by the industry. The increase can be attributed to the gender agnostic requirements of the industry and the flexible work environment provided by the IT-BPO companies.

II. Review of literature

Work Life Conflict

Greenhaus and Beutall (1985) defined work and family conflict as a form of interrole conflict in which the role pressures from the work and family domains are mutually incompatible in some respect. Work and family are two central domains in most adult's lives.

Researchers in this area have distinguished between two types of work family conflict, work interfering with family and family interfering with work.. The second work family conflict strain-based, conflict arises when strain in one role affects one's performance in another role. The last type is behaviour based conflict which refers to incompatibility between the behavioral patterns that are desirable in the two domains. Some of the more prevalent

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antecedents and outcomes of work life conflict identified in the literature include role commitment, role salience and satisfaction, parenting (Rousseau, 1984), marriage and spousal support (Barnette and Marshall, 1991) and supervisory and company support.

Causes

Organizational Commitment

Organizational commitment refers to the extent to which employees like and feel a part of the organization for which they work for. It is the relative strength of an individual's identification with and involvement in a particular organization (Mowday et al., 1982).

Work life balance is positively associated with organizational commitment. This finding is consistent with work family conflict. Research has found that employees who experience excess work to family conflict and family to work conflict will be less committed to their work organization (Allen et al., 2000).

Grover and Crooke (1985) studied multiple family responsive policies together and found that employees with access to more of these benefits showed greater commitment and lower intentions to leave. Their study also supported the idea that flexible working hours offered by organizations influence organizational commitment of employees.

Organizational Climate

Organizational climate is defined as the recurring patterns of behaviour, attitudes and feelings that characterize life in the organization more related to atmosphere tone and ethos. An organizational climate is a relatively new concept and refers to the extent to which work environment is supportive with regards to employees work and family needs (Allen, 2001).

These individual perceptions are often aggregated or collected for analysis and understanding at the team or group level, or the divisional, functional, or overall organizational level. Since positive work family climate is a specific form of organizational supportiveness and work family conflict constitutes a stress factor at work, we can conclude that supportive work family climate would alleviate the negative impact of work family conflict on the job related attitudes of the employees, thus improving the productivity of the organization (Thompson et al., 1999).

Work Exhaustion

Work exhaustion is about the work itself and reflects a salient frustration about job outcomes (Moore, 2000). Employees are likely to decrease their organizational commitment as their work exhaustion increases because they will lose faith that the company can take care of

them by providing an acceptable work life.

Research has linked perceived work interference to increased burn out. Moreover, it is stated that perceived conflict from family responsibilities interfering with work will also be associated with emotional exhaustion (Bacharach, Bamberger and Conley, 1991).

Work Thought Interference

Work thought interference is the inability to stop dwelling on work matters or simply an inability to stop thinking about work. An unforeseen and illogical consequence of a single sided segmentation has been the amalgamation or blurring of the borders between home and work for the worker, enhancing the intrusion of the work role into the non-work domain (Louis and Sutton 1991).

Thus, the work thought interference leads to an identifiable behavioural manifestations and social repercussions. It may otherwise be described as the failure of one's role transition, in border crossing behaviour. (In case of career women, post child bearing period is an especially painful manifestation of work's all consuming nature) (Sarason, et al., 1996).

Perceived Work and Family Demand

Perceived demand is a global perception of the level and intensity of responsibility within the family and the work domains. It is posited that perceived demand will be identifiable to researchers and perceived by the individuals.

Voydanoff (1988) decreased both work and family demand concepts that included variables such as number of hours worked, schedule role conflict, role ambiguity, role overload, stress from work, marital status, spouses working hours, number of children and age of children. Finally, many of these measures are indicators for demand such as hours worked rather perceived demand levels.

Job Autonomy

Job autonomy is defined as "The degree to which the job provides substantial freedom, independence and discretion to the individual in scheduling the work and in determining the procedure to be used in carrying it out" (Ilgen and Hollenbeck, 1992).

Another perspective of job autonomy as stated by Ettner and Grzywacz (2001) found that workers who reported higher levels of dissatisfaction with working conditions and lack of autonomy had more negative health effects. Thus, job autonomy impacts not only organizations and family but also on the health of the employee.

Job Involvement

The work involvement represents the degree to which the individual's job is central to his / her self-concept and identity. Lodahl and Kejner (1965) conceptualized job involvement as an internalization of work values such that an individual derives self-esteem from involvement in the job. Khan (1990) embedded the concept of job involvement within a broader construct of psychological climate.

The fact that women still assume greater responsibility for family may help explain their lesser degree of work involvement (Spence, 1985). Paradoxically, married women individuals generally report greater levels of work involvement probably due to their family responsibilities.

Family Involvement

Although, Brett and Yogev (1988) concluded that family involvement was not significantly correlated with restructuring, on the contrary Karambaya and Reilly (1992) determined that family involvement correlated positively with work restructuring for both the husbands and wives in their dual earner sample. Moreover family involvement is the impact those family roles have on an individual's image, self-concept and commitment to the roles.

III. Research Methodology

Research Design: The design applied in the study is descriptive research design. It is appropriate to use this method in this which research describes the relationship among different variables.

Questionnaire: A set of suitable questions were framed to satisfy the objective of the study with the help of the previous studies and literature review for the selected variables. Questionnaire consists of both qualitative and quantitative items.

Sampling: In this study, population refers to women employees in IT and ITES firms located in Chennai city. Therefore, convenience sample technique is adopted for selecting the sample units. Among the collected questionnaires, only 598 filled questionnaires are taken into account for the research. See table 2.

As for the causes organizational commitment (Mowday, Steers and Porter., 1979), Job Autonomy (Beehr., 1976), Job involvement (Lodhal and Kejner., 1965), Family involvement (Lodhal and Kejner., 1965), Organizational climate (Patterson et al., 2005), Perceived workload (Moore., 2000), Perceived family demand (Sudman., 1982),

Work thought interference (Friedmann and Greenhaus., 2000), Work exhaustion (Moore., 2000).

Segmentation of the causes of role conflict.

In order to group the statements based on causes for work life conflict, explorative factor analysis is used KMO Bartlett's test have been used for measuring sampling adequacy. See Table 3.

The results in the table show that the sample size of this study is adequate to conduct factor analysis. Moreover, the correlation between the variables under each factor is significantly strong and that is justified with the chi-square value in the table

Around thirty-seven statements, barring three, are grouped under nine factors. For extraction purpose principle component analysis is applied. Varimax rotation method is used for rotating the matrix. Factors, which score eigen value of more than one, are taken for analysis purpose and statements with loading factor less than 0.5 are suppressed.

Influence of Causes on Role Conflict

Based on previous literature it has been found that role conflict is caused by many factors. However, the predominant factors are organizational commitment, organizational climate, and work exhaustion, perceived workload, perceived family demand, family involvement and job autonomy. For understanding the significance of influence and the level of influence of these factors, stepwise regression is employed. See Table 4.

The standard error estimated for these co-efficients appeared to be less. Furthermore, to measure the multicollinearity tolerance and variance inflated factors are calculated which shows the acceptable level. The co-efficient estimates are adjusted in the table due to the relationship among independent variable include subsequently in to the equation

Though there are nine causes of work family conflict identified from previous studies, only three are found to influence the work family conflict among women employees in IT industry. The levels of influence made by other causes are not statistically significant.

The causes are included based on value of partial correlation co-efficient. The independent variables are considered for evaluation in the descending order of partial correlation and significance of influence on dependent variable. Since the significant level of influence of organizational commitment, organizational climate, perceived family demand, family involvement, and job autonomy and job

involvement is less than .05, they are not included. Nonetheless, they influence the work family conflict to some extent.

The general approach estimating the regression equation by considering a set of variables defined and then selectively adding among these variables one by one until some overall criterion measure is achieved. This approach provides an objective method for selecting variables that maximize the prediction while employing the smallest number of variables.

In this technique, variables are individually assessed for their contribution to prediction of the dependent variables and added to or deleted from the regression model based on their contribution. The output of stepwise regression explains with the evidence of seven regression equations that has been evolved by introducing only the significant independent variable one by one.

It is evident from R square and adjusted R square values in the table that the level of variance explained by the independent variables is generally increasing due to the sequential addition of causes. On the total 34.0 percent of variance of strain dimension of work family conflict is explained by work exhaustion, organization climate, job autonomy, work thought interference, family involvement, perceived family demand, perceived workload.

The percentage of variance for the included variables is in the decreasing order with work exhaustion accounting for the highest of (18.7), organization climate (7.8), job autonomy (2.2), work thought interference (2.1), family involvement (1.3), perceived family demand (1.7), and perceived workload (0.8). See Table 5.

The unstandardised co-efficient value denotes the highest level of influence is contributed by work exhaustion. Every unit change of the included independent variable will cause the respective co-efficient value change in the dependent variable as given in the table.

The estimated regression co-efficient represents both the type of relationship and the strength of the relationship between independent and dependent variables in the regression variable.

This value of the co-efficient indicated the change in the dependent values each time the independent variable changes by one unit. Work exhaustion (0.448), organization climate (0.261), job autonomy (0.161), work thought interference (0.142), family involvement (-0.176), perceived family demand (0.203) and perceived workload (0.142). The standardized error estimated for this co-

efficient are considerably less.

Moreover, the multicollinearity is measured using tolerance factor and variance inflation factor. The tolerance factor is also in the decreasing trend, which is within the acceptable domain. The co-efficients estimates are adjusted in the table due to the relationship among the significant independent variables included successively in the regression.

Although there are nine causes of work life conflict identified, only seven of them are found to influence the work family conflict strain among the women employees in the IT industry. This implies that the level of influence contributed by the other two causes is not significant. These causes are included sequentially based on the partial correlation co-efficient.

Therefore, the independent causes are considered for evaluations are in the descending order of partial correlation. The organizational commitments, job involvements are the two causes excluded and have values less than 0.5.

IV. Results & Discussion

Work life conflict strain

It is identified from the study that the strain dimension of work family conflict is caused by work exhaustion, organizational climate, job autonomy work thought interference, family involvement perceived family demand and perceived workload among the several other factors. Work exhaustion is the strongest factor influencing the work family conflict strain and the least influencing factor is perceived workload. The change of every unit in the independent variable leads to the corresponding change in the dependent variable as in the case of the study is work family conflict strain. Organizational commitment and job involvement taken as a cause in the study is not found to influence work life conflict strain.

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Table 1: Employment in Information Technology Industry in India

Year/Item	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
IT Services and Exports	0.17	0.21	0.30	0.39	0.51	0.69	0.86	0.92
BPO Exports	0.11	0.18	0.22	0.32	0.42	0.55	0.70	0.79
Domestic Market	0.25	0.29	0.32	0.35	0.38	0.38	0.45	0.50
Total Employment	0.52	0.67	0.83	0.06	0.29	0.62	0.01	2.21

Source: NASSCOM Report 2009

Table No. 2 Reliability values of the variables

Causes	
Organisation commitment	0.851
Job autonomy	0.762
Job involvement	0.809
Family involvement	0.898
Organisational climate	0.847
Perceived workload	0.817
Perceived family demand	0.793
Work thought interference	0.748
Work exhaustion	0.814
Work family conflict	0.923

Table 3: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.841
Bartlett's Test of Sphericity, Approx. Chi-Square	1.009E4
Degree of freedom	666
Significance	.000

Table 4: Influence of causes on work family conflict strain

Model	R	R Square	Adjusted R Square	Std. Error	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.433 ^a	.187	.186	.79819	.187	137.220	1	596	.000
2	.515 ^b	.266	.263	.75934	.078	63.543	1	595	.000
3	.537 ^c	.288	.284	.74826	.022	18.753	1	594	.000
4	.556 ^d	.309	.305	.73768	.021	18.170	1	593	.000
5	.568 ^e	.322	.317	.73119	.013	11.567	1	592	.001
6	.583 ^f	.339	.333	.72257	.017	15.208	1	591	.000
7	.590 ^g	.348	.340	.71867	.008	7.444	1	590	.007
Predictors	Constant, Work Exhaustion								
Predictors	Constant, Work Exhaustion, Organizational Climate								
Predictors	Constant, Work Exhaustion, Organizational Climate, Job Autonomy								
Predictors	Constant, Work Exhaustion, Organizational Climate, Job Autonomy, Work Thought Interference								
Predictors	Constant, Work Exhaustion, Organizational Climate, Job Autonomy, Work Thought Interference, Family Involvement								
Predictors	Constant, Work Exhaustion, Organizational Climate, Job Autonomy, Work Thought Interference, Family Involvement, Perceived Family Demand								
Predictors	Constant, Work Exhaustion, Organizational Climate, Job Autonomy, Work Thought Interference, Family Involvement, Perceived Family Demand, Perceived Workload								
Dependent Variable	Work Family Conflict Strain.								

Co-efficients and Collinearity statistics on WFC Strain

S. N	Model	Unstandardized Co-efficients		Std Co-eff	T	Sig	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero order	Partial	Part	Tolerance	VIF
1	Constant	1.343	.131		10.229	.000					
	Wrk Extn	.463	.040	.433	11.714	.000	.433	.433	.433	1.000	1.000
2	Constant	-.005	.210		-.024	.981					
	Work Extn	.515	.038	.481	13.495	.000	.433	.484	.474	.971	1.030
	Orgn Cli	.331	.041	.284	7.971	.000	.202	.311	.280	.971	1.030
3	Constant	-.161	.210		-.765	.445					
	Wrk Extn	.480	.038	.449	12.488	.000	.433	.456	.432	.928	1.077
	Orgn Cli	.223	.048	.191	4.651	.000	.202	.187	.161	.708	1.413
	Job Atny	.182	.042	.176	4.330	.000	.313	.175	.150	.722	1.384
4	Constant	-.521	.224		-2.328	.020					
	Wrk Extn	.436	.039	.407	11.087	.000	.433	.414	.378	.863	1.158
	Orgn Cli	.222	.047	.191	4.714	.000	.202	.190	.161	.708	1.413
	Job Atny	.200	.042	.194	4.800	.000	.313	.193	.164	.715	1.399
	Wrk Thgt Int	.173	.041	.152	4.263	.000	.222	.172	.145	.918	1.089
5	Constant	-.020	.266		-.076	.939					
	Wrk Extn	.455	.039	.425	11.552	.000	.433	.429	.391	.846	1.182
	Orgn Cli	.254	.048	.219	5.330	.000	.202	.214	.180	.680	1.470
	Job Autny	.199	.041	.193	4.813	.000	.313	.194	.163	.715	1.399
	Wrk Thgt Int	.147	.041	.129	3.581	.000	.222	.146	.121	.886	1.129
	Fmly Inv	-.153	.045	-.121	-3.401	.001	-.046	-.138	-.115	.911	1.098
6	Constant	-.129	.265		-.487	.627					
	Wrk Extn	.423	.040	.395	10.647	.000	.433	.401	.356	.811	1.233
	Orgn Cli	.227	.048	.195	4.757	.000	.202	.192	.159	.665	1.503
	Job Autny	.172	.041	.167	4.158	.000	.313	.169	.139	.695	1.438
	Wrk Thgt Int	.134	.041	.118	3.308	.001	.222	.135	.111	.880	1.136
	Fmly Inv	-.191	.046	-.150	-4.183	.000	-.046	-.170	-.140	.870	1.149
	Pred Fmly Dmd	.164	.042	.145	3.900	.000	.301	.158	.130	.804	1.244
7	Constant	.031	.270		.117	.907					
	Wrk Extn	.448	.041	.419	11.045	.000	.433	.414	.367	.769	1.300
	Orgn Cli	.261	.049	.225	5.323	.000	.202	.214	.177	.622	1.609
	Job Atny	.161	.041	.156	3.889	.000	.313	.158	.129	.689	1.452
	Wrk Thgt Int	.142	.040	.125	3.518	.000	.222	.143	.117	.876	1.142
	Fmly Inv	-.176	.046	-.138	-3.850	.000	-.046	-.157	-.128	.858	1.165
	Pred Fmly Dmd	.203	.044	.180	4.587	.000	.301	.186	.153	.722	1.385
	Pred Wrk load	-.142	.052	-.108	-2.728	.007	.147	-.112	-.091	.711	1.407

EFFECTS OF AGE ON CONSUMERS FOOD RETAIL BEHAVIOUR: AN ENUMERATIVE REVIEW OF OLDER CONSUMERS IN PUNJAB

Anupama Prashar★

The purpose of the present study is to examine the changes in consumers' food retail behaviour with regard to the demographic variable of age. The study is focused on food retail behaviour of consumers aged over 50 years and living in urban cities of Punjab, one of the progressive states of India. The food retail scenario in the country has changed and whilst affecting all consumers has impacted to a greater degree the older consumers. This makes this consumer segment worthy of consideration. Hence, an insight into and understanding of how old consumers interact with and evaluate a food retail offering will help improve customer service and satisfaction. This understanding will enable service providers to segment their consumer base and target specific customer groups with strategies designed to meet their retail needs. The findings of the study show that consumer's food-related retail behaviour changes with increase in their age. The results indicate a decline in consumers' patronage of modern retailers and their perceived value of discount offers and promotions with increase in age. It is also revealed from the study that with increase in age there is an apparent increase in the use of local kirana shops, the enjoyment gained from shopping and the difficulty experienced in reaching out modern formats.

I. Introduction

Food is one of the fundamental human needs and as a result shopping for food is a necessary and regular activity for all consumers. It has been described as one of the most basic elements of consumer behaviour (Bawa and Ghosh, 1999).

The food retail behaviour of consumers has always been influenced by a range of factors like economic, cultural, psychological and lifestyle factors (Roux et al., 2000; Roslow et al., 2000; Choo et al., 2004; 2004; Goyal and Singh, 2007). The decisions that consumers make regarding food purchase influence the place of shopping, the time of shopping, the items to be shopped, frequency of shopping and how they evaluate products after purchase (Solomon, 2004). So, the retailers must have an understanding of consumer buying behaviour and the factors that influence and shape their decisions.

There are number of studies which point out that socio-demographic factors such as gender, age, educational status and income play an important role in determining the food retail behaviour across the world (Rao et al., 2005; Nagla, 2007). Empirical studies show that food choice decisions are principally associated with demographic factors (Shepherd, 1999). As characteristics of consumers of a particular age affect the way they shop for food, it is relevant to study specific age segments individually and

determines their consumer behaviour (Furst et al., 1996). Knowledge of behaviour traits and preferences of their customer segment will equip the retailers to fulfill their demands in the competitive market of food retailing. In view of that, the present study was conducted to inform retailers of their customers' behaviour by examining the possible use of age as a segmentation variable.

Food retailing in India

In India, the food retail behaviour of consumers has significantly changed during the last decade. Consumers have now become more discriminating in their food product choices and have started emphasizing more on convenience, freshness and quality of products (Sinha and Banerjee, 2004; Chengappa et al, 2005). Increase in income, particularly of the lower and middle-income households, is having a significant impact on the demand for food items, because these groups tend to spend a relatively larger share of their income on food consumption (Landes et al., 2004). With the modernization of food retail and rapid changes in the buying behaviour of consumers, the retail market for food in the country is growing by leaps and bounds. To capture the opportunities of a growing retail market in the country, big corporate organizations are foraying into this segment (KPMG, 2005). These organizations are in the

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process of investing huge amounts for creating retail chains throughout the country. In view of these developments, retailers need to understand the food retail behaviour of different consumer segments.

Bases of consumer segmentation

There have been several bases for segmentation used in previous studies to measure the influence of different factors on consumer behaviour. Some of these bases include demographic, geographic, lifestyle, and economic factors. The choice of basis of segmentation is by and large determined by the nature of the study. For the purpose of the present study, the demographic variable of age will be examined for its impact upon consumer food retail behaviour. Consumers of different ages will have differing needs and desires which may translate into different behaviour patterns and levels of satisfaction. Hence, there may be a possibility for retailers to base their segmentation of customer based on age criterion.

Classification of food retail stores

For the purpose of this study, the following classification of food stores was used based on the previous work of Sinha (2002). In India more than 60 per cent of food and grocery stores measuring less than 50 sq. ft commonly known as traditional kiranas (Indian version of a combination of convenience and mom-and-pop stores). They are prolific with a number of brands and their offerings and almost all the store space is used for stocking or displaying the merchandise. Consequently, most stores do not even have the space for the shoppers to enter the store area. This category of retail stores was classified as “traditional kirana stores”.

However, a number of traditional kirana stores have now expanded in size (upto 500 sq ft) allowed self service and provided customers with deeper and wider assortments. These stores have offered facilities like home delivery, replacements and credit. This category of stores was classified as “transformed kirana stores”. The third category of food stores belong to corporate retail chains such as Reliance fresh (Reliance Retail limited), More stores (Aditya Birla Retail Limited), Big Bazaar (Pantaloon Retail), Easy day (Bharti Retail), 6-Ten (REI Agro). These modern stores are larger (mostly 1,000-3,000 sq ft; very few of them have more than 5,000 sq ft) and are being designed for better display and browsing by the shoppers. This category was classified as “modern stores”. The stores were chosen from five urban cities of Punjab viz. Ludhiana, Mohali, Jalandhar, Patiala, and Amritsar. These cities were selected because of growing retail market in these cities.

II. Review of Literature

- Saba et al. (2008) found that advancing age brings about changes in consumers’ needs and abilities, some of which are beyond the control of the individual and yet will impact consumers’ food-related behaviour in terms of purchase, preparation and consumption. Their study revealed that the marketplace needs of elderly are different from those of other segments and the ageing process alters an individuals’ approach to food.
- Simpson et al. (2005) proved that as an individual’s age increases he experiences a decline in appetite, food intake and diet as well as a decrease in their ability to taste, smell, chew and handle food. They proposed that that such changing needs and abilities will impact upon consumer behaviour, nutritional intake and health status and therefore, must be taken into consideration by retailers while planning a retail provision.
- Cox et al. (2005) examined the pleasures of store shopping and the results of their study revealed that age has an impact on consumers’ enjoyment of shopping and that the elderly customer values personal service more highly than any other age group does. They also highlighted that in comparison to their younger counterparts; older consumers place greater emphasis on the sensory aspects of shopping and enjoy shopping as a form of exercise.
- Bawa and Ghosh (1999) discovered that frequency of grocery shopping was linked to age with the over 55 age group shopping more often, hence, establishing a connection between behaviour and age. The results showed that age has a bearing on consumer behaviour.
- Nunes and Cespedes (2003) suggested that demographic segmentation can reveal what people buy but fails to explain their shopping strategies which include frequency, location and type of retailer. They proposed that exploring trends in shopping and the forces propelling such trends are essential in order to match retailing opportunities with the needs of individuals and communities.
- Myers and Lumbers (2008) suggested that with regard to retailing, older shoppers are soon going to be the most important group of all consumers in terms of retail spend and of vital importance within the food marketplace.
- Visvabharathy and Rink (1984) revealed that despite the increasing population and economic influence held by older customers, they remain a consumer group that has not received justified attention. In the past, marketers assumed that the older consumer segment was not

considered responsive or large enough to warrant special attention and as a result there has been a lack of research and understanding of the mature market.

Objectives of the study

The broad objective of the study was to examine the association of age with changes in lifestyle, purchasing behaviour and consumer perceptions. In order to examine the use of demographic variable of age as a basis of segmentation of food consumers.

III. Research Methodology

An exploratory research design was used in the study whereby data were collected by conducting a field survey across different retail store categories in five urban cities (Ludhiana, Mohali, Patiala, Amritsar, and Jalandhar) of Punjab. A structured questionnaire (Annexure I) was developed on the basis of similar studies in this field of research (O'Neill, 2005; Kelly and Parker, 2005). The questionnaire comprised statements on consumer lifestyle characteristics, food retail and food usage behaviour, and consumer perceptions. For the purpose of pre-testing the questionnaires, a pilot survey was conducted in the city of Mohali. As an outcome of the pilot study, some of the statements were amended and improved. The modified versions of questionnaires were finally administered on the respondents. In order to be eligible to participate in field survey; the respondent had to be aged over 50 years and should have been carrying out their own food shopping. Participation was on a voluntary basis and no form of incentive was offered. The respondents were approached at the store after they had finished shopping and were leaving the store. It was felt that shop intercept (exit interviews) would capture the recency effect. There was a risk that an interview away from the store might bring only "visualized perception" and not the real experience. A total of 791 respondents were interviewed using structured questionnaire at 20 stores from each of three defined categories (traditional kirana stores, transformed kirana stores and modern stores) in five selected cities of Punjab.

The Statistical Package for Social Sciences (SPSS) version 15 was used to analyze the data generated. Age was examined collectively as the main research variable and then broken down into five age bands (50-54, 55-59, 60-64, 65-70 and 70+) to enable a comparison of behaviour within and across the age spectrum under investigation. Using the SPSS software, descriptive statistics were calculated and a series of chi-square tests for independence were conducted to explore the relationship between age and food retail behaviour. Statistical significance was

measured at a level of $p = 0.05$ for all tests. The Cramer's V effect size was calculated as a measure of the strength of association between the two variables under investigation.

IV. Findings & Analysis

A series of chi-square tests were conducted to explore the association between age and food retail behaviour of consumers.

Age and Consumer food retail behaviour

The results of chi-square test (Table I) show that in terms of the patronage behaviour, the older consumers differ across the five age groups, with the youngest segment of consumers (50-54 years) shopping predominantly in "modern stores". However, the patronage of modern stores declines steadily and significantly as age increases, with a difference of 37 per cent between the youngest age group (50-54 years) with 73 percent patronage and the oldest age group (70+ years) with 36 per cent. In contrast to the negative relationship between age and the use of modern stores, growing age of consumers is directly correlated to an increase in the use of "transformed or traditional kirana stores"; hence, the more mature shopper patronages kirana stores more so than younger age groups.

The results in Table 1 show a significant relationship between respondents' age and the location of store used to carry out her food shopping ($df = 12, n = 791, p < 0.001, \text{chi-square} = 54.786$). The reliance on traditional or transformed kirana stores to provide all food and grocery needs of older consumers' increases with increase in their age and it is interesting to note the rapid increase in the use of the kirana stores among the oldest age group. About 29 per cent of those aged over 70 years shop for their food at a location within their neighbourhood. This figure is almost double that of any other age group, suggesting that the stores located nearby residential areas are popular among old consumers. Linked to store location is the mode of transport used to reach the food retail store and the results show that the percentage of respondents who drive themselves declines as age increases while the number of people dependent on others to provide them with transport increases with age. The results also indicate that the difficulty experienced in accessing food retail stores also increases with increase in age. Growing age was found to be significantly associated with higher levels of reported problems in getting to food shops ($df = 4, n = 791, p = 0.001, \text{chi-square} = 27.082$), with respondents in the oldest age segment experiencing difficulties more than twice (42 percent) that of the youngest age group (19 percent). A

positive correlation is apparent between age and difficulties experienced getting to food stores as illustrated by the steady increase in the number of people reporting difficulties in all five consumer segments.

Age and Lifestyle of consumer

The results (Table II) show that age has a significant association with consumer lifestyles. The chi-square value between age and consumer lifestyle characteristics found a significant relationship for marital status ($df = 8, n = 791, p = 0.001, \text{chi-square} = 195.697$), living arrangements ($df = 8, n = 791, p = 0.001, \text{chi-square} = 177.368$) and ability to drive ($df = 4, n = 791, p = 0.001, \text{chi-square} = 104.224$). Such findings indicate that with growth in number of consumers the likelihood of them being widowed, living alone and not being able to drive to the store increases. All of these are lifestyle factors that have the potential to impact upon how one behaves as a consumer. The results indicated that age had a large effect on the likelihood of being widowed and the findings shows a steady increase in number of widowed respondents from 17 per cent belonging to the youngest age group (50-54 years) to 84 per cent belonging to the oldest age group (+70 years). With regard to living arrangements, the percentage of people that live alone increases rapidly with age, from 23 per cent belonging to the youngest age segment (50-54 years) to 83 per cent in the oldest age group (+70 years). The data in Table II also shows there is a 50 per cent difference between the number of respondents who cannot drive to those who can, across the same age group (21 and 71 per cent respectively). Clearly, age has a major impact upon consumer lifestyle, which will, as a consequence, have a significant effect on consumer food retail behaviour. Such lifestyle factors are usual, yet it is important to document the extent of their existence and be aware of their role in influencing consumer food retail behaviour.

The results in Table III show a significant association between age and consumer perceptions of food shopping. Data analysis reveals that growth in age is associated with an increase in the enjoyment of shopping ($df=8, n=791, p=0.001, \text{chi-square}=33.578$), and a decrease in nutritional awareness ($df=4, n=791, p=0.001, \text{chi-square}=44.890$), perception of convenience ($df=8, n=701, p=0.01, \text{chi-square}=22.702$) and the perceived value of multi-purchase special offers ($df=4, n=791, p=0.001, \text{chi-square}=23.740$).

The findings of the study indicate that consumer's age has an impact upon their lifestyles, food purchase behaviour and perceptions of food shopping. Although it is not unusual

to find that as age increases the chances of being widowed, living alone and not being able to drive also increase. It is however necessary to take into consideration the impact of such factors upon consumer retail behaviour. Previous studies reveal that marital status can impact upon food habits in older age with the loss of a partner having a negative effect on food behaviour. Widowhood has been recognized to have potentially negative effects on food intake and it compromises nutrition and health (Hughes et al., 2004). Furthermore, whether older people live alone or with others is considered one of the most important factors affecting buying behaviour and those who live alone are known to demonstrate different shopping behaviour to those who live with others (Lazer, 1986). Further, the ability to drive provides a sense of independence to the older consumers. It also gives older shoppers the freedom of store choice decisions and serves to ease physical access difficulties. It has been noted that older people face problems using alternative forms of transport and are reluctant to use services such as public transport (Visvabharathy and Rink, 1984). Hence, the oldest consumers who don't have personal means of transport will require additional support and mechanisms to ensure they are able to physically access food shops. Retailers should take the needs of older consumers into consideration in order to satisfy them.

The behaviour of older consumers with regard to the type of store used, store locations and method of transport employed was found to be significantly related to consumers' age (figure 1). Those who choose to shop in modern stores such as Reliance fresh, Food Bazaar or Easy Day were found to be of a younger age profile with patronage of modern stores declining steadily as age increases. Retailers should be aware of this change in behaviour and should attempt to attract the aged population.

Results indicate a significant association between respondents' age and the location of store they used to carry out their food shopping. Location has been stated as the deciding factor (Sinha 2002) and the results of this study show that when age is taken into consideration, shops located close to customers are more frequently visited for shopping. They are of immense importance to older consumers and customers' dependence upon them increases with age (figure 2). Hence, the closing of local kirana shops due to advent of organized retail in the country has had and will continue to have a negative effect on the older consumers. The ability to provide transport for oneself helps to ensure adequate food access and maintain independence, as without personal means of transport one may experience difficulties in getting to food retail outlets. As driving ability decreases with age, older consumers are

more likely to suffer restricted buying opportunities. This study found a significant relationship between age and the type of transport used. Age has an impact on consumer's physical food access behaviour and as consumers' age increases they become more dependent on others for transport provision. This is an issue to be considered by the retailers.

Further the study reveals that consumer perception of food shopping differs among the age groups under investigation. When consumers become older, their enjoyment for shopping increases. Along with its functional role, shopping provides enjoyment and entertainment for consumers (Dennis et al., 2007). Given such benefits, it is important that every effort should be made to enable older people to participate in food shopping and enable provision for them. Clearly, consumers' perceptions of convenience and ease of food shopping as an activity differ across age groups. Results indicate that the number of people who view discount promotions as good value declines with age. Older consumers who tend to generally have smaller consumption of food items and do not favour bulk buying of food items where they are offered two or more of the same item.

V. Conclusion

The results show that as a consumer becomes older, her retail buying behaviour changes, so does their food-related behaviour. Increasing age is associated with changes in lifestyle, purchasing behaviour and consumer perceptions. Retailers need to be aware of the way in which their customers behave and by being able to better differentiate between age segments, they can then appropriately tailor their products and services to meet specific needs and demands of their consumers. The lifestyle changes which result from the ageing process may also impact how one behaves. These lifestyle changes are, however, age related and therefore the combination of both causes alterations in consumers' actions. Traditionally, the older consumers have been treated as one homogeneous group. However, the findings of the study show that there are significant differences within the age segments of the older population and they should be treated as a heterogeneous consumer group. Hence, age may be used as a base to segment consumer retail behaviour although retailers have to be watchful in relying on it exclusively.

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Figure 1: Age vs. choice of store

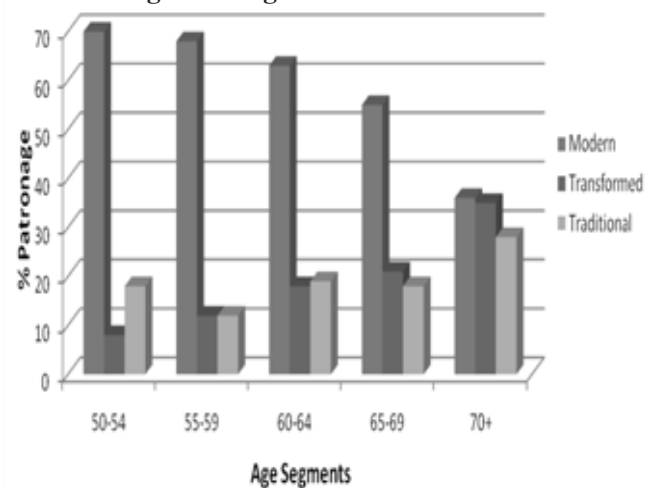


Figure 2: Age vs. frequency of food shopping from neighborhood

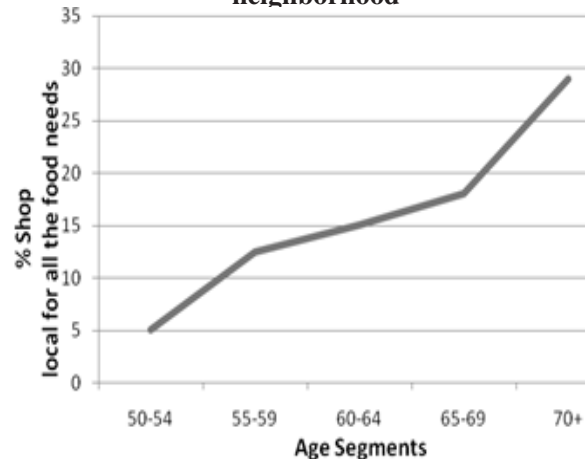


Table 1: Association of consumer age with retail behaviour

	Age groups					p-value
	50-54 (n=185)	55-59 (n=156)	60-64 (n=170)	65-69 (n=137)	70+ (n=143)	
Category of store (%)						
Modern	73	69	64	56	36	<0.001*
Transformed kirana	8	15	17	25	36	
Traditional kirana	19	15	20	19	27	
Store location (%)						
In a mall	25	27	34	36	26	<0.001*
Main market	56	55	48	45	41	
Suburbs	19	18	18	19	33	
Mode of transport used (%)						
Walk	5	8	6	8	13	<0.001**
Public or Rented transport	6	4	7	9	11	
Drive	88	89	88	83	76	
Local food & grocery shopping for (%)						
Re-fills	60	60	52	46	43	<0.001**
All	5	12	14	18	29	
Emergency	9	10	7	10	7	
Don't shop	25	9	27	26	20	
Frequency of local food & grocery shopping (%)						
Daily	19	15	11	12	12	<0.001*
Two or six times week	31	30	29	21	20	
Once a week	16	27	24	23	40	
Less often than once a week	9	9	9	17	8	
Not applicable	25	19	27	26	20	
Experience difficulty in getting to store (%)						
Experience difficulty	19	21	23	29	42	<0.001*
No difficulty	81	79	77	71	58	
Level of planning involved in food purchase (%)						
Plan week ahead	61	64	73	77	78	<0.01*
Impulse buy	32	30	24	20	16	
Shop daily	7	7	4	4	6	
Store location (%)						
Experience difficulty	5	8	8	10	15	<0.05*
No difficulty	95	92	92	90	85	

p-values are calculated between groups

Cramer's V effect size: *small, **medium, ***large significant difference between groups

Table 2: Association of age with lifestyle

	Age groups					p-value
	50-54 (n=185)	55-59 (n=156)	60-64 (n=170)	65-69 (n=137)	70+ (n=143)	
Martial status (%)						
Unmarried	14	12	8	6	6	<0.001***
Widowed	17	27	52	67	84	
Married	69	62	40	27	10	
Living arrangement (%)						
Alone	25	7	7	9	7	<0.001**
With partner only	52	59	37	25	11	
With whole family	23	34	57	66	83	
Ability to drive (%)						
Yes	79	66	56	40	29	<0.001**
No	21	34	44	60	71	

p-values are calculated between groups

Cramer's V effect size: *small, **medium, ***large significant difference between groups

Age and Consumer perception related to food shopping

Table 3: Association of age with consumers' perception of food shopping

	Age groups					p-value
	50-54 (n=185)	55-59 (n=156)	60-64 (n=170)	65-69 (n=137)	70+ (n=143)	
Shopping enjoyment (%)						
Enjoy shopping	48	54	67	70	73	<0.001*
Neither enjoy/do not enjoy	15	13	12	10	8	
Do not enjoy shopping	37	33	22	20	20	
Value of special offers (%)						
Good value	36	29	25	28	15	<0.001*
Not good value	64	71	75	83	85	
Perception of convenience (%)						
More convenience	42	42	39	37	22	<0.01*
No difference	49	53	48	5	61	
Less convenience	10	6	13	12	17	
Confidence in food nutrition (%)						
Confident	81	75	68	62	48	<0.001*
Not confident	19	25	32	39	52	

p-values are calculated between groups

Cramer's V effect size: *small, **medium, ***large significant difference between groups

A STUDY ON CONSUMER BEHAVIOR TOWARDS INSTANT FOOD PRODUCTS IN THE MODERN ERA

N. Anitha★ S. Radhika★★

The consumer purchases a variety of goods and services to satisfy his wants. He is influenced in his purchasing activities by some considerations which lead him to select a particular commodity or a particular retail store in preference to others. So, consumer buying behavior is complex. Unlike olden days where man used to have his food lavishly and slowly, the present trend changed the food habits for those which are simple and easy to digest. Hence, the existence of these food fulfilled the needs of modern human being. Canned food, convenience food, fast food, frozen food, instant products, dried food, preserved food, all comes under instant food. The standard of living is also changing due to rise in income level, influence of western countries, more global trade and traveling . Hence, people are changing their taste to instant food as compared to the old traditionally prepared food. As a researcher I am interested in studying the consumer behavior towards the instant food products preference among 100 respondents of supermarkets of Trichy and the samples were tested, analyzed by using the research tools and the results interpreted and recommended suggestion. The study was successfully carried out in a time frame of 7 weeks. The outcomes are satisfactory.

I. Introduction

Consumer purchases are likely to be influenced by physiological, psychological and sociological factors. The commodities and services are brought by the consumer to satisfy his basic needs, for comfort, pleasure, recreation and happiness. Every individual has physiological need such as hunger, shelter, thirst, etc., which have to be satisfied for survival. The psychological factors like status prestige and social factors like friends, neighbors, job and relatives influence their purchasing activities.

People bear certain beliefs and attitudes towards certain types of goods, brands of commodities and retail outlets based on their previous experience. When there is a need, they are able to discover some new commodities capable of satisfying their needs. Before the commodities and brands are selected, these commodities must compete successfully against alternatives in the market. Again selection of a particular commodity depends on income of the consumer and how necessary this product is to the individual. Before the selected commodity is purchased, an individual requires information regarding the various sources of supply of the commodity, its brands, relative merits and demerits, uses and value of their characteristic features and services offered. The common sources through which individual gathers information are from advertising, friends, retailers in the locality, displays in shops and food labels.

II. Review of Literature

Brown et al. (2010) reported that the need for effective nutritional education for young consumers has become

increasingly apparent, given their general food habits and behaviour, particularly during adolescence and analyzed that the interaction between young consumers' food preferences and their nutritional awareness behavior. The authors suggested that food preferences are often of a 'fast food' type.

Ramasamy et al. (2009) Stated that, the buying behaviour is vastly influenced by awareness and attitude towards the product. Commercial advertisements on television was said to be the most important source of information, followed by displays in retail outlets.

Kubendran and Vanniarajan (2009) studied, the change in consumption pattern and found it was due to changes in food habits. If income and urbanization increase among consumers, the percentage of income spent on consumption increased.

Kamalaveni and Nirmala (2009) reported that, there is complete agreement between ranking given by the housewives and working women regarding the reasons prompting them to buy instant food products. age, occupation, education, family size and annual income had significant influence on the per capita expenditure of the Instant Food Products.

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Rees (2009), in his study revealed that factors influencing the consumer's choice of food were flavour, texture, appearance, advertising, a reduction in traditional cooking, fragmentation of family means and an increase in 'snacking'.

Prellet al. (2009) conducted a study to examine the factors influencing adolescents' fish consumption in school. The results suggested that, it is important to alter dishes so that they appeal to children and to pay attention to the whole meal, accompaniments included.

The study undertaken by Sheeja (1998) in Coimbatore district considered the quality aspects like aroma, taste, freshness and purity as the major factors deciding the preference for a particular brand of processed spices.

Gaur and Waheed (2002) conducted a study on buying behaviour for branded fine rice in Chennai and Coimbatore city. The study indicated that retailers were ranked as the prime source of information and the family members as the next important source of information about the branded fine rice.

Chen (2001) expressed a different thought on brand awareness that it was a necessary asset but not sufficient for building strong brand equity. In this view, a brand could be well known because it had bad quality.

III. Research Methodology

Scope of the study: This study helps identify the consumer's satisfactions towards the instant food products.

Objectives of the study:

- To study the consumer preference towards the instant food products in the modern era
- To identify the factors influencing customer to choose instant food products.
- To measure the level of preference of instant food among the various brands.
- To estimate the reason for buying the instant food products.

Research Design:

The research study is descriptive in nature.

Data sources:

The researcher adopted primary as well as secondary data sources for collecting the data by interviewing the respondents by using the tool structured questionnaire.

The primary data was collected by the interview scheduling method and secondary data was collected from magazines, newsletters and website portals.

Sample Size

The sample size selected for the study is 100 using convenient sampling method

Tools of Analysis:

Using statistical Package for Social Science (SPSS), Garrett Ranking Technique, Correlation, Regression Analysis, and Chi-square Test was carried out.

IV. Results & Interpretation

1. Garrett Ranking Technique:

Reasons for Purchasing Instant Food:

The reason for purchasing a instant food is saving time, Various other reasons are price, quality, variety, taste. The respondents were asked to rank the reasons for choosing the instant food. The details were analyzed by using Garrett ranking technique and the results are presented the table 1.

The above table infers that the respondents purchase the instant food for Price that ranked first and subsequently Quality was the second most important reasons for purchase the instant food products followed by Variety, Taste, and Speed of Cooking.

Factors that influence purchase of Instant Food:

Multiple Factors influence the consumers while buying the instant food products. The factors are friends/neighbors, media, window display, shopkeeper and word of mouth. See Table 2.

Inference:

The table infers that window displays; shopkeeper were the most important factors in buying the instant food products followed by friend/neighbor, media, and word of mouth.

Regression Model

a. Dependent Variable: do you feel instant food is comfortable

a. Predictors: (Constant), suggest the instant food others, instant food you like to provide your childrens, do you like instant food, shopkeeper, noodles product, dosai mix product. The above table shows that regression value is 0.936. This means 93.6 per cent variation takes place in

the overall satisfaction of instant food (dependent variable) can be explained from the 6 independent variables. The table 3 adjusted R-square value as 0.86.

Income level of the person

Ho: there is no significant difference between the occupation of the person and the monthly spent amount on instant food.

H1: there is significant difference between the occupation of the person and the monthly amount spent on instant food

Inference:

Reject the H1 and therefore accept the Null hypothesis. It indicates that there is no significant relationship between the occupation of the person and monthly spent amount on instant food. See Table 5. Inference: It is inferred from the table that the correlation value is 0.930. This indicates high positive correlation between the variables income level of customer and loyal customer of super market.

V. Findings

Finding Based on Garrett Technique:

Garrett ranking was used to analyze the rank given by the customers for reasons for purchasing instant food and factors influencing of instant food. The respondent were asked to rank the given reasons and factors based on their preference for selection of handset. The per cent position of each rank obtained was converted into scores by referring to the table given by Garrett. Mean score was estimated for each reasons and factors. These mean scores for all the reasons and factors were arranged in descending order. Reasons and Factors with the highest mean score were given first rank. Thus the important reason and factors were obtained.

Finding Based on Regression Analysis:

Suggest the instant food others, instant food you like to provide your children, do you like instant food, shopkeeper, noodles product, dosa mix product, these variables are interrelated between satisfaction of the instant foods. The above model summary table shows regression value is 0.936. This means 93.6 per cent variation in overall satisfaction of instant food (dependent variable) can be explained from the 6 independent variables.

Finding Based on Chi-Square Test:

There is no significant relationship between the occupation of the person and monthly amount spent on instant food.

So occupation does not affect the amount of buying instant food.

Finding Based on Correlation: As the Income level has influences the buying power of the customers they choose the loyal supermarket. So, Income level decides the factor to determine the consumer on choosing the loyal supermarket.

VI. Conclusion

The overall objective of the study is to analyze the Consumer preference towards Instant food. To fulfill the objectives of the study, Trichy city was purposively selected for the study.

The primary data were collected from the customer who had come to buy the instant food for particular super market. The data were collected through a well-structured interview schedule. The data were analyzed using a Statistical Techniques such as Regression Model, Correlation, Chi-square test, and Garrett ranking technique to draw a meaningful inference.

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Table 1: Reasons for Purchasing Instant Food

Particulars	Garrett score	Ranking
Price	54.8	I
Quality	54	II
Variety	47.8	III
Taste	47.6	IV
Speed of cooking	44.8	V

Table 2: Factors that influence purchase of Instant Food

Particulars	Garrett Score	Ranking
Windows Display	54.6	I
Shopkeeper	52	II
Friend/Neighbor	50	III
Media	48.4	IV
Word of Mouth	44	V

Table 3: Regression Model Summary

Mode	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.857(a)	.735	.732	.56666
2	.902(b)	.813	.809	.47773
3	.923(c)	.852	.848	.42715
4	.929(d)	.863	.857	.41385
5	.933(e)	.870	.864	.40432
6	.936(f)	.877	.869	.39659

Table 4: Chi-Square Test

	Observed N	Expected N	Residual
Student	19	20.0	-1.0
Housewife	29	20.0	9.0
Business	17	20.0	-3.0
govt.employee	12	20.0	-8.0
private employee	23	20.0	3.0
Total	100		

Test Statistics

	occupation of the person	Monthly spend instant food
Chi-Square(a)	8.200	7.900
Df	4	4
Asymp. Sig.	.085	.095

Table 5: Correlation

		income level of the person	loyal customer of the supermarket
income level of the person	Pearson Correlation	1	.930
	Sig. (2-tailed)		.000
	N	100	100
loyal customer of the supermarket	Pearson Correlation	.930	1
	Sig. (2-tailed)	.000	
	N	100	100

A STUDY OF THE MOTIVES OF ENTREPRENEURS TOWARDS THE ESTABLISHMENT OF BUSINESS ENTERPRISES

Kanagaluru Sai Kumar ★

Entrepreneurial development is one of the important segments playing a significant role in the development of country. The entrepreneur plays a risk bearing role which is a difficult one. Therefore, the progress in this sector is difficult to achieve. The present work is a study of the factors that motivate the individuals to establish their own enterprises in the socio economic environment. The sample collected for the study is 115. The data was collected systematically through a structured questionnaire and analyzed. The results shows that profit generation / money making is the one of the main reasons for starting the enterprises followed by other factors such as previous experience in the same or related line and Government and institutional assistance. Appropriate statistical test such as t- test has been applied to test the difference of opinion on motives of entrepreneurs' gender wise. The test reveals that the opinion of male and female respondents is the same.

I. Introduction

The word 'entrepreneur' is taken from the French language where it originally meant an organizer of musical or other entertainment forms. Various experts in their research have given different meanings and views to the word entrepreneur. It was only in the beginning of 18th century that the word was used to refer to economic aspects (Khanaka.1990). According to Kilby (1971), Richard Cantillon, an Irish man living in France was the first person in the early 18th century to refer the word entrepreneur to economic aspects. Richard Cantillon (1971) defined entrepreneur as an agent who buys factors of production at certain prices in order to combine them into a product with a view to selling them at uncertain prices in future. He stressed the words 'risk taking' and 'uncertainty' by giving example of a farmer who pays out contractual incomes which are certain to land-lords and laborers and sells at prices which are uncertain. He also illustrated the concept by giving other examples of manufactures and traders wherein risk taking and uncertainty are the inherent factors. Similar views were expressed by Knight (1965). He also added that entrepreneur is an economic functionary who undertakes responsibility of uncertainty which by its very nature cannot be insured, or capitalized or salaried.

J B Say (1827) extended the concept of entrepreneurship a little further. His definition associates entrepreneur with the functions of co ordination, organization and supervision. According to him, an entrepreneur is one who combines the land of one, the labour of another and the capital of yet

another, and thus produces a product. By selling the product in the market, he pays interest on capital, rent on land and wages to laborers and what remains is his/her profit. In the words of Usha Kiran Rai and Monica Srivastava (2011), the definition given by Say (1827), involves entrepreneur as an organizer and speculator of a business enterprise, who shifts economic resources out of an area of lower productivity into an area of higher productivity and greater yield. Also the definition clearly distinguished between the role of a capitalist as a financier and entrepreneur as an organizer of business activity. Alfred Marshall (1936) also expressed the similar views and advocated the significance of organization among the services of special class of business undertakers. The 19th century oxford dictionary in its supplement recognized the word entrepreneur and has modified its definition as one who undertakes an enterprise and combines capital and labour for the purpose of manufacturing or production. Undertaking an enterprise is entrepreneurship (Tandon, 1975).

Schumpeter (1939), in his magnum opus 'Theory of Economic Development' assigned the important and crucial role of entrepreneur as 'innovation'. He considered economic development as a discrete dynamic change brought by entrepreneur by instituting new combinations of production, i.e. innovations. The introduction of new combination of factors of production according to him may occur in any one of the following five forms:

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1. The introduction of a new product in the market
2. The instituting of a new production technology which is not yet tested by experience in the branch of manufacture concerned.
3. The opening of a new market into which the specific product has not previously entered.
4. The discovery of new sources of supply of raw material
5. The carrying out of the new form of organization of any industry by creating of a monopoly position or the breaking up of it.

Schumpeter (1939), further made a distinction between an inventor and an innovator. According to him, an inventor discovers a new method and new materials, whereas an innovator utilizes the inventions and discoveries in order to make new combinations and thus produces newer and better goods which yield him profit and satisfaction. Shraavanvel (1987), in his views on entrepreneurial development stated that economists have recognized the entrepreneur as an important agent in generating investment opportunities. Sociologists consider him as sensitive energizer in modernization of societies. The psychologists treat him as an entrepreneurial man, his motivations and aspirations in order to decipher his character which is conducive to economic development. Political scientists regard him as the fair child of political system which provides effective assistance for his emergence.

Khanka (1990) in his book on entrepreneurship development concluded the concept of entrepreneur as the association of three elements namely, risk bearing, organizing and innovating. He also defined the entrepreneur as a person who tries to create something new, organizes production and undertakes risks and handles economic uncertainty involved in enterprises.

Vasant Desai (1991), in his book on entrepreneurial development explained the definition given by Peter F Drucker of an entrepreneur as one who always searches for change, responds to it, and exploits it as an opportunity. The various studies on entrepreneurship say that an entrepreneur is one of the important segment of development and economic growth of any country. He acts as catalyst of change and works for good and betterment of people. He is a visionary and an integrated man with outstanding leadership qualities with a desire to excel gives top priority to research and development.

II. Review of Literature

According to David Mc Clellan(1981), a person acquires three types of needs as a result of one's life experience.

These needs are need for affiliation, need for power and need for achievement. He also added that these three needs simultaneously act on an individual. But, in case of entrepreneur, the high need for achievement is found dominating and responsible for motivating a person towards entrepreneurship. There are many studies on identifying the factors responsible for motivating the people to start business enterprises. Sharma (1980) classified all the factors motivating the entrepreneurs into two types as internal factors and external factors. The internal factors include desire to do something new, educational background and occupational background or experience while the external factors include government assistance and support, availability of labour, raw material and promising demand for the product. The study made by Murthy et al (1986) identified and classified the motivating factors on different basis. According to them, entrepreneurs are motivated to start a business enterprise due to ambitious factors, compelling factors and facilitating factors. Another study conducted by Vivek Deolanker(1989), found that to do something pioneering and innovative, desire to be free and independent, bright demand prospectus for product and availability of sub contracting facilities from large units are the factors responsible for motivating. The biggest obstacle to progress in India is the limited aspirations of the people. A motivated person is likely to have broader vision which helps him to make life more meaningful. Motivation is an index of one's belief in his own resourcefulness to take up challenging tasks like entrepreneurship (Nayar, 1962).

The substance of literature is that there are very few studies on entrepreneurial motivation. Many of these studies concentrated on importance of entrepreneurship and characteristics of entrepreneurs etc giving least scope for the identification of factors responsible for entrepreneurial motivation. Hence, the present study may be considered as an attempt to examine the various motivational factors which contribute to setup an enterprise.

Significance of the Study

Entrepreneurship has acquired a special significance in the context of economic growth and industrial development in the rapidly changing economic and socio cultural climates both in developed and developing countries. Small scale industry has emerged as the most dynamic segment of 55 percent of overall values of industrial production. This sector provides 42 percent employment opportunity both for literate and illiterate. It is a state of healthy balance in the country in which entrepreneurs make their respective contributions to achieve the economic development of the

country. With the government policy of encouraging the entrepreneurs, a large number of business enterprises were established in recent years. The trend in the establishment of business enterprises in Andhra Pradesh has been an upward trend. This study is based on the entrepreneurs located in Nellore district in Andhra Pradesh. The need for the study is to ascertain some factors related to motivation of the entrepreneurs. The present study will help to develop more appropriate policies to develop and encourage entrepreneurship and these could be incorporated into a well designed set of policies for better performance of entrepreneurs.

Objectives of the Study

The purpose of the study was to investigate specific factors associated with motivation of prospective entrepreneurs in Nellore district. The following research objectives have been formulated to guide the study.

1. To study the factors responsible for setting up a business enterprise.
2. To identify the dominating factors and suggest suitable measures for the development of entrepreneurship.

Hypothesis:

This study infers that the motives behind the establishment of a business enterprise don't depend on the gender. As against this background, the statement of hypothesis is as follows.

H01: There is no significant relationship between motives behind the establishment of a business enterprise and the gender of entrepreneurs.

III. Research & Methodology

Instrument development & Data Collection

To satisfy and to meet the objectives of the study both qualitative methodology and quantitative techniques have been used. The study has been conducted at various places in Nellore district of Andhrapradesh state. With reference to the sample, the respondents were selected from a variety of industrial activities. The instrument used in this study consists of two parts.

The first part deals with the demographic profile of the respondents such as gender, age, area, nature of entrepreneurial activity, family structure etc. Part two deals with a questionnaire on the factors responsible for motivating the entrepreneurs for setting up of business enterprises. It consists of 20 questions, each of which is measured on four point Likert's scale, in which, 1 indicated

“strongly disagree”, 2 indicated “disagree”, 3 indicated “agree” and 4 indicated “strongly agree”.

Contents and validity of the statements were established by experts consisting of top officials and other employees of the district industries centre. Each of the experts on the panel was asked to verify the instrument for clarity, wording, overall appearance and meaning in addition to content and validity. The instrument was pilot tested among a group of entrepreneurs, not included in the sample. A total of 125 respondents were selected randomly and questionnaires were delivered to them. The data were systematically collected during the period between April 2011 and June 2011. Nearly 10 of the responses received were with incomplete questionnaires i.e. not answered properly due to various reasons. Hence they were treated as unusable responses and thus eliminated from the study. A total of 115 responses were received, thus obtained a response rate of 92 percent. The secondary data has been collected from the district industries centers, magazines, journals, books, periodicals, news papers and from the Internet.

Analysis of data:

The primary data collected have been sorted, classified and tabulated in a format and analyzed by using statistical package for social sciences (SPSS16.0). An appropriate statistical procedure like t-test has been used for inference.

IV. Results & Analysis

Profile of the respondents:

Of those responding to the questionnaire, it was found that 72.17 percent (83) were male while 27.83 percent (32) were female (Table 1). Out of which 2.61 percent (03) of the respondents are below 25 years of age, 22.61 percent (26) are in the age group of 25 to 35 years, 26.95 percent (31) are in the age group of 35 to 45 years and 47.83 percent (55) respondents are with above 45 years of age. Similarly 84.34 percent (97) were belongs to nuclear and 15.66 percent (18) were belongs to joint families. An analysis of the respondents in terms of their gender, age and family structure reveal that majority of respondents were male dominated, belongs to above 45 years of age category with nuclear family structure.

Factors responsible for motivating the entrepreneurs:

The various factors which directly or indirectly responsible for motivating the entrepreneurs towards establish their own business enterprises were analyzed using statistical techniques like Arithmetic Mean. These factors have been

ranked according to their relative importance. The table 2 shows such information.

It can be noted from the table that profit generation / money making was the one of the main reasons for starting the enterprises followed by previous experience in the same or related line and Government and institutional assistance. The corresponding mean values of the statements were 3.76, 3.65 and 3.57 respectively. Similarly the factors which were least motives are no other alternative except to start business enterprise, followed by easy availability of money and good contacts are possible with others. The corresponding mean values are 2.07, 2.19 and 2.25 respectively. The results of the study, i.e. the main reasons for the establishment of business enterprise, supports the findings of the study made by Usha Kiran Rai and Monica Srivastava (2011), but differs from the second most important motive of not working for others, While, the second most important motive behind the establishment of business enterprises is in tune with the result of work done by Khanaka (1990).

Test of hypothesis:

Motives of Entrepreneurs for Setting up Business Enterprises Gender wise:

In this section, an attempt has been made to find out whether the importance assigned to various statements / factors vary across gender. All the motives of entrepreneurs for setting up business enterprises have been taken into account and an appropriate statistical test such as t- test has been applied to test the hypothesis.

Null Hypothesis (H01): There is no significant association between gender and motives of entrepreneurs.

It is observed from the table 3, that there is no significant association between gender and motives of entrepreneurs. Only in case of the factors like, confidence in the product or services offered and good contacts are possible with others, a difference of opinion exists between male and female respondents. The corresponding t- value of the statements is 2.204 and 2.209 respectively, which are not significant at 5%.

V. Conclusion

Since the economic growth of any country largely depends on the major role played by the entrepreneurs, motivation in this sector is highly essential for the entry of large number of new entrants towards entrepreneurship. Some of the studies have already done to understand the various factors that motivate the entrepreneurs. Various motives

such as profit generation / money making, previous experience in the same or related line and Government and institutional assistance have become the major factors found in the present study are responsible for the entry of new entrants. The results of the present study will be helpful to the practitioners in understanding various factors responsible for the entrepreneurial development.

Male and female respondents were found to have almost similar opinion about the importance given to the motives of entrepreneurs. They were found differing slightly on confidence in the product or services offered and good contacts are possible with others. Hence, the authorities of entrepreneurial development activities need to formulate different strategies on these two factors to influence the motivation of male and female entrepreneurs.

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Table 1: Profile of the Respondents

1. Gender	No. of Respondents	Percentage
(a) Male	83	72.17
(b) Female	32	27.83
Total	115	100.0
2. Age		
(a) Less than 25 Years	03	2.61
(b) 25-35 Years	26	22.61
(c) 35-45 Years	31	26.95
(d) Above 45 Years.	55	47.83
Total	115	100.0
3. Family structure		
(a) Nuclear	97	84.34
(b) Joint	18	15.66
Total	115	100.0

Table 2: Motives of Entrepreneurs for Setting up Business Enterprises

S.No	Statements/ Factors	Mean	Rank
1.	Enterprising attitude	2.97	13
2.	Training/Education in such kind of Production	3.12	11
3.	Previous experience in the same or related line.	3.65	2
4.	Profit generation / Money making	3.76	1
5.	Did not want to work for others	3.25	8
6.	Want to have own control and freedom	3.45	6
7.	To make my own decisions	3.51	4
8.	To maintain social status	3.23	9
9.	To maintain self achievement	3.05	12
10.	Confidence in the product or services offered	2.92	14
11.	Shortage of demand for the product	2.56	16
12.	Government and institutional assistance	3.57	3
13.	Advice of business by friends	2.52	17
14.	Confidence and growth of business	3.47	5
15.	Profits earned by friends in similar concern	3.37	7
16.	It is most suitable and doesn't affect the family life	2.65	15
17.	Good contacts are possible with others	2.25	18
18.	No other alternative except to start business enterprise	2.07	20
19.	Easy availability of money	2.19	19
20.	To provide employment opportunity to others	3.15	10

Table 3: Results of t- test for Motives of Entrepreneurs for Setting up Business Enterprises

S.No	Statements/ Factors	Male Average	Male SD	Female Average	Female SD	t- value	Decision at 5% level of significance
1	Enterprising attitude	2.92	1.19	3.02	1.23	0.336	Accept
2	Training/Education in such kind of Production	3.11	1.32	3.13	1.56	0.895	Accept
3	Previous experience in the same or related line.	3.64	0.92	3.66	0.98	1.174	Accept
4	Profit generation / Money making	3.71	0.79	3.81	0.85	-0.153	Accept
5	Did not want to work for others	3.19	1.01	3.31	1.05	0.220	Accept
6	Want to have own control and freedom	3.43	1.02	3.47	1.16	-1.136	Accept
7	To make my own decisions	3.49	0.95	3.53	0.97	0.722	Accept
8	To maintain social status	3.15	1.12	3.31	1.22	0.822	Accept
9	To maintain self achievement	3.01	1.01	3.09	1.03	0.336	Accept
10	Confidence in the product or services offered	2.83	1.12	3.01	1.24	2.204	Reject
11	Shortage of demand for the product	2.45	1.15	2.67	1.27	-1.398	Accept
12	Government and institutional assistance	3.49	0.91	3.65	1.03	1.099	Accept
13	Advice of business by friends	2.43	1.46	2.61	1.72	1.488	Accept
14	Confidence and growth of business	3.42	1.14	3.52	1.22	0.174	Accept
15	Profits earned by friends in similar concern	3.25	1.31	3.49	1.45	0.740	Accept
16	It is most suitable and doesn't affect the family life	2.53	1.15	2.77	1.29	0.822	Accept
17	Good contacts are possible with others	2.18	1.11	2.32	1.37	2.209	Reject
18	No other alternative except to start business enterprise	2.01	1.24	2.13	1.4	-0.457	Accept
19	Easy availability of money	1.98	1.08	2.4	0.96	-1.264	Accept
20	To provide employment opportunity to others	3.09	1.01	3.21	1.09	0.664	Accept

CAPITAL ADEQUACY AND ASSET QUALITY: A COMPARATIVE STUDY OF PUBLIC AND PRIVATE SECTOR BANKS

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It is imperative for any bank to maintain depositor's confidence and prevent the bank from going bankrupt. Capital is regarded as a cushion to protect depositors and promote the stability and efficiency of any financial system. Capital Adequacy reflects the overall financial condition of banks and also the ability of the management to meet the need for additional capital. Similarly, quality of assets is an important parameter to measure the strength of the bank. The prime purpose behind measuring the asset quality is to ascertain the component of non-performing assets (NPAs) as a percentage of the total assets. This signifies what type of advances the bank has made to generate interest income. In this article, an effort has been made to compare the performance of selected banks on two parameters viz. capital adequacy and asset quality in two periods ranging from 2002-2006 and from 2007-2011.

I. Introduction

Banking industry is currently in a transition phase. On the one hand, the public sector banks (PSBs.), which are the mainstay of the Indian Banking system, are in the process of shedding their fat in terms of excessive manpower, excessive NPAs and excessive government equity, on the other hand the private sector banks are consolidating themselves through mergers and acquisitions. The share of public sector banks (PSB's) in total deposits and advances is 78 and 77 per cent respectively and they have driven the growth of deposits and advance for the industry over the last four years as their deposits and advances have grown 2.2 and 2.3 times respectively. (The Indian Express Sep 03 2011).

Gross non-performing loans (NPAs) for public sector banks other than SBI rose by 10.5 per cent in the three months to March 2012. The gross NPA ratio of public sector banks as of March 2012 stood at 3 per cent of the gross advances as compared to 2.25 per cent a year ago. After provisioning, net NPA ratio stood at 1.5 per cent. (The Hindu Business Line, May 2012).

PSBs, which currently account for more than 78 percent of total banking industry assets are encumbered with NPAs, falling revenues from traditional sources, lack of up to date technology and a substantial workforce while the new private sector banks are moving ahead and changing the traditional banking business model by way of their latest innovation and service. Still, the private players however cannot match the PSB's reach, size and access to low cost deposits. Though domestic private and foreign banks

performed better than public-sector banks initially during 1995-96, no significant relationship between ownership and performance is found in the Indian banking sector during 1999-2000 (Sarkar, Sarkar and Bhaumik (1998), Sayuri Shirai (2001).

To analyze the level of risk and financial viability of the banks number of measures has been introduced to closely watch the banks over the years. CAMEL Model (capital adequacy, asset quality, management quality, earnings and liquidity) is one such measure to assess bank's ability to manage its performance. The CAMEL Model in banking sector is a significant improvement over the earlier systems in terms of frequency, coverage and focus.

In this article, an attempt has been made to compare the relative performance of selected banks on two parameters of CAMEL Model viz. Capital Adequacy (C) and Asset Quality (A). The present study covers a period of 10 years from 2002 to 2011 is divided into two parts viz. 2002-2006 and 2007-2011 respectively.

II. Review of Literature

In this section, various studies relating to the financial performance of banks have been reviewed on the topic.

Reddy K. Sriharsha (2012) evaluated relative performance of banks in India using CAMEL approach. It is found that

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public sector banks have significantly improved indicating positive impact of the reforms in liberalizing interest rates, rationalizing directed credit and Investments and increasing competition.

Prasad K. V. N., Ravinder G. and Reddy D. M. (2011) evaluated the performance of banking sector with the help of CAMEL model which measures the performance of banks from each of the important parameter like Capital Adequacy, Assets Quality, Management Efficiency, Earning Quality and Liquidity. All public sector banks and thirteen private sector banks were used for the study. According to the importance of study each parameter is given equal weights. Results shown that on average Karur Vysya Bank was at the top most position followed by Andhra bank, Bank of Baroda. It is also observed that Central Bank of India was at the bottom most position. The largest Public sector bank in India availed 36th position.

Mittal and Dhade (2009) found that CAMEL rating is used by most banks across the world as a performance evaluation technique. It takes on all the important criteria, i.e., Capital, Assets, Management, Earnings and Liquidity (CAMEL) for the evaluation of any bank. There is a need for sufficient knowledge of the rating system on the part of bank employees, in order to guide the banking growth rate in the positive direction. The objective of the paper was to find out the awareness level, as well as the perception among bank employees about CAMEL rating, and the efforts made by them for improving the ratings of their banks. The results showed that there is, relatively, a higher degree of lack of awareness among executives of private sector banks, and hence, they do not recognize it positively. Foreign banks enjoy a high degree of awareness and positive perception about the same.

Dash and Das (2009) compared the performance of public sector banks with private and foreign banks under the CAMELS framework. The data used for the study were the audited financial statements of a sample of Indian banks over the last five financial years. The results of the study show that private and foreign banks fared better than public sector banks on most of the CAMELS factors in the study period. The two contributing factors for the better performance of private/foreign banks were Management Soundness and Earnings and Profitability.

Bodla and Verma (2006) studied the performance of SBI and ICICI through CAMEL Model for the period 2000-01 to 2004-05. It was found that SBI had an edge over its counterpart ICICI in terms of Capital Adequacy. Nevertheless, the ICICI had an edge over SBI regarding

assets quality, earning quality and management quality. The liquidity position of both the banks is sound and does not differ significantly.

Wirnkar and Tanko (2008) studied CAMELs to evaluate banks performance with the help of secondary data collected from the annual reports of eleven commercial banks in Nigeria over a period of nine years (1997 - 2005). The purposive sampling technique was used and analyzed via the Efficiency Measurement System (EMS) 1.30 software of Holger School and independent T-test equation. The findings revealed the inability of each factor in CAMEL to capture the holistic performance of a bank. Also revealed, was the relative weight of importance of the factors in CAMEL which resulted to a call for a change in the acronym of CAMEL to CLEAM. In addition, the best ratios in each of the factors in CAMEL were identified. For example, the best ratio for Capital Adequacy was found to be the ratio of total shareholders' fund to total risk weighted assets. The paper concluded that no one factor in CAMEL suffices to depict the overall performance of a bank.

Sangmi and Nazir (2010) evaluated the financial performance of the two major banks operating in northern India. The evaluation has been done using CAMEL Parameters, the latest model of financial analysis. Through this model, it is highlighted that the position of the banks under study is sound and satisfactory so far as their capital adequacy, asset quality, Management capability and liquidity is concerned.

Kouser and Saba (2012) compared the performance of Pure Islamic banks, mixed banks and conventional banks using CAMEL model. The ratios defined by CAMEL method were analyzed by using ANOVA to investigate any significant difference. Based on the analysis, it was found that Islamic banks have adequate capital and have good asset quality when compared to Islamic branches of conventional banks and conventional banks. Moreover, Islamic banks in general have good management competency in comparison to conventional banks. The earnings of Islamic branches of conventional banks are greater than full-fledge Islamic banks and conventional banks. Finally, it can be concluded that Islamic banks have a developing setup.

III. Research Methodology

Objectives

Capital Adequacy reflects the overall financial condition of banks and also the ability of the management to meet the need for additional capital. The prime motto behind measuring the assets quality is to ascertain the component

of non-performing assets (NPAs) as a percentage of the total assets. Therefore, in the present study an attempt is made to assess performance of banks on the two parameters of CAMEL model viz. capital adequacy and asset quality in two periods.

For achieving the above objectives, following hypotheses are formulated for the study:

H1: There is no significant difference in the capital adequacy of public and private sector banks during the periods under study.

H2: There is no significant difference in the asset quality of public and private sector banks during the periods under study.

Methodology Adopted

To ascertain relative positions of banks, CAMEL ratios were computed from a data taken from "Trends and progress of Banking in India" published by RBI, IBA Bulletins and various journals related to the study. Our data set consists of four banks comprises of two leading public sector banks viz. SBI and PNB and two leading private sector banks viz. HDFC and ICICI. The period for evaluating performance through ratios in this study is 10 years, which is divided into two periods viz. 2002 to 2006 and 2007 to 2011. The research design is Analytical in nature. The tabulated data are subjected to analysis by using various statistical techniques like mean, variance and t-test to arrive conclusions regarding the two parameters.

CAMEL Model is a supervisory framework consistent with international norms which cover risk-monitoring factors for evaluating the performance of banks. Amongst the reforms in the banking sector CAMEL Framework has its own contribution to the way modern banking is looked up on now. The attempt here is to see how different ratios are used and interpreted to reveal a bank's performance. This framework involves the analysis of six indicators reflecting the health of financial institutions. The indicators are as follows:

- Capital adequacy
- Asset quality
- Management soundness
- Earnings and profitability
- Liquidity
- Sensitivity to market risk

For the present study only two parameters have been taken viz. capital adequacy and asset quality. The brief discussion on the ratios considered in the analysis is presented as follows:

CAPITALADEQUACY:

It is imperative for a bank to maintain depositor's confidence and preventing the bank from going bankrupt. Capital is seen as a cushion to safeguard depositors and promote the stability and efficiency of financial system anywhere around the world. Capital Adequacy reflects the financial condition of banks and also the ability of the management to meet the need for additional capital by and large. It also indicates whether the bank has adequate amount of capital to absorb unexpected losses. Capital Adequacy ratios act as indicators of bank leverage. The following ratios measure the capital adequacy.

a. Capital Adequacy ratio (CAR): The banks are required to maintain Capital Adequacy ratio as specified by RBI from time to time. It is arrived by dividing the sum of Tier-I, Tier-II and Tier-III capital, by aggregate of Risk Weighted Assets (RWA). Symbolically:

$$\text{CAR} = (\text{Tier I} + \text{Tier II} + \text{Tier III}) / \text{RWA}$$

Tier I capital includes equity capital and free reserves.

Tier II capital comprises of subordinate debt of 5-7 years tenure, revaluation reserves, general provisions and loss reserves and cumulative perpetual preference shares.

Tier III capital comprises of short-term subordinate debt.

b. Debt- Equity Ratio: This ratio indicates the degree of leverage of a bank. It indicates how much of the bank business is financed through debt and how much through equity. This is calculated as the proportion of outside liabilities to net worth. Higher ratio indicates less protection for the depositors and creditors in any banking system.

c. Advances to Assets: This is the ratio of Total Advances to Total Assets. This ratio indicates a bank's aggressiveness in lending which ultimately results in better profitability. Higher the ratio, better the position.

ASSETS QUALITY:

Quality of assets is an important parameter to measure the strength of any bank. The key consideration behind measuring the assets quality is to determine the component of non-performing assets (NPAs) as a percentage of the total assets. This specifies what type of advances the bank has made to generate interest income. As a result, the type

of the debtors the bank is ascertained through assets quality. Following ratios are used to assess the assets quality:

- a. Gross NPAs to Net Advances: It equals to Gross NPAs measured as a percentage of Net Advances. Lower the ratio, better the quality of advances.
- b. Net NPAs to Net Advances: It is the most standard measure of assets quality. In this ratio, Net NPAs are measured as a percentage of Net Advances.
- c. Total Investments to Total Assets Ratio: It indicates the extent of use of assets in investment as against advances. This ratio is calculated by dividing the total investments by total assets of a bank. A higher ratio means that the bank has kept a high cushion of investments to safeguard against its NPAs.
- d. Net NPAs to Total Assets: This ratio signifies efficiency of the bank in assessing credit risk and its capability in recovering the debts. This ratio is calculated by dividing the net NPAs by total assets. Lower the ratio better is the performance of the bank.

IV. Analysis & Interpretation

Capital Adequacy Ratio: Table 4.1a depicts the results of capital adequacy ratio (CAR) of four select banks from the year 2002-2006 (1st period) to 2007-2011 (2nd period). The table clearly shows that average capital adequacy ratio of HDFC has risen from 12.59 in 1st period to 15.20 in 2nd period. Similarly, there is rise in average CAR of ICICI, SBI and PNB from 13.43 to 15.19; 12.94 to 13.08 and 10.17 to 13.27 from the 1st period to 2nd period respectively. Variance of HDFC in 1st period is 1.62 but in 2nd period is 3.33. Similarly the variance of ICICI, SBI, and PNB of 1st period is 12.90, 1.29 and 0.63 but in 2nd period is 13.01, 0.84 and 0.77. The value of t-test reveals significant rise in the performance of HDFC and PNB at 10 percent and 5 percent level of significance. This determines that HDFC and PNB are able to meet the time liabilities and other risks such as credit risk, operational risk, etc. The value of t-test for ICICI and SBI bank are 0.55 and 0.86 respectively.

Debt Equity Ratio: Table 4.1b depicts the result of debt equity ratio of four select banks from 1st period to 2nd period. As discerned from the table, average debt equity ratio of HDFC in 2nd period is 9.02 which is less than the 1st period i.e. 11.17. Similarly, average debt equity ratio registered a decline in case of ICICI, SBI and PNB from 5.44, 12.84 and 15.23 to 13.72, 17.34 and 21.29 from 1st period to 2nd period respectively. Variance of HDFC, ICICI,

SBI, and PNB during 1st period is 5.80, 20.72, 3.13 and 0.26 but in 2nd period the same is 1.33, 5.42, 1.86 and 0.70 respectively. Significant decline has been noticed at 5 percent level in case of HDFC and PNB.

Advances to Assets: This signifies bank's aggressiveness in lending, which ultimately results in better profitability. Table 4.1c clearly depicts that the mean values of HDFC, ICICI, SBI and PNB registered a rise during the second period over the first period. This signifies that all the banks are aggressive in their lending operations. Variance of all the banks has also risen from 1st period to 2nd period. The value of the t-test of all the banks viz. HDFC, ICICI, PNB and SBI are 0.00 which is the significant at 5 percent level of significance.

Assets Quality

Gross NPAs to Net Advances: Here, the Gross NPAs are measured as a percentage of Net Advances. Table 4.2a depicts the result of gross NPAs to Net advances ratio of four select banks from 1st period to 2nd period. As is evident from the table, the average ratio of HDFC, SBI and PNB registered a downfall from 1.99, 8.46 and 7.64 in 1st period to 1.67, 6.01 and 5.25 in 2nd period respectively. It means that all the banks are efficient enough to manage its gross NPAs. But, the mean value of ICICI bank (3.33) has risen from 1st period to 2nd period (3.91). The value of the t-test for HDFC, ICICI, SBI and PNB are 0.72, 0.85, 0.52 and 0.36 which is insignificant at 5 percent level of significance.

Net NPAs to Net Advances: It is the most standard measure of assets quality. The lower the ratio shows the better assets quality. Table 4.2b depicts the result of Net NPAs to Net Advances ratio of four select banks from 1st period to 2nd period. As revealed from the table 4.2b the average ratio of net NPAs to net advances registered a decline from 0.40, 1.84, 4.11 and 3.61 in 1st period to 0.39, 1.57, 0.59 and 1.69 in the 2nd period in case of HDFC, ICICI, PNB, and SBI respectively. This reveals better asset quality management by all the banks. Variance of all the banks has also declined from 1st period to 2nd period. The value of the t-test for HDFC, ICICI, SBI and PNB are 0.93, 0.81, 0.26 and 0.12 which is insignificant at 5 percent level of significance.

Total Investments to Total Assets: It indicates the extent of deployment of assets in investment as against advances. This ratio is calculated by dividing the total investments by total assets of a bank. A higher ratio means that the bank has conservatively kept a high cushion of investments to guard against NPAs. Table 4.2c represents the result of

total investments to total assets ratio of four select banks from first to 2nd period. The table clearly shows that the average total investment to total assets ratio of SBI has registered a rise from the 35.66 in 1st period to 37.82 in 2nd period. Conversely, the downfall is noticed in the average ratio with regard to rest of the three banks in the same period. It can be interpreted from the comparative figures of mean values that only one bank that is SBI has been able to keep a high cushion of investments for NPAs. Variance of all the banks has declined during second period over first period. The value of t-test for HDFC, ICICI, SBI and PNB are 0.17, 0.48, 0.72 and 0.47 which is not found significant at 5 percent level of significance.

Net NPAs to Total Assets: The ratio indicates efficiency of the banks in assessing credit risk and recovering the debts. This ratio is arrived by dividing the net NPAs by total assets. Lower the ratio the better is the performance of the bank. Table 4.2d exhibits the result of net NPAs to total assets ratio of four banks in 1st period and 2nd period. The table depicts that the mean values of HDFC, ICICI and SBI has registered a rise from 0.01, 0.00 and 0.48 during 1st period to 0.13, 0.46 and 0.33 in 2nd period respectively. On the contrary, the mean value of PNB has fallen from 1.79 to 0.24 in the corresponding period which represents efficient operations of PNBs. Variance of all the banks has shown declining trend during 2nd period over 1st period. The value of the t-test for HDFC, PNB and SBI are 0.87, 0.55 and 0.11 respectively which is not significant at 5 percent level of significance. On the other hand, the t-test value for ICICI bank is 0.03 which is found significant at 5 percent level of significance.

Conclusion

CAMEL model is an important tool to assess the relative financial strength of a bank and thereby propose essential measures to remove weaknesses of a bank. In India, RBI adopted CAMEL approach in 1996 on the recommendations of Padmanabham Working Group (1995) committee. In the present study, CAMEL model is used to assess relative positions of two public sector and two private sector banks of India. Mixed results are witnessed through the analysis. Statistical findings reveal that there are significant differences in the mean capital adequacy ratio of HDFC and PNB in two time period under study. It is also evident from the results that all the four banks (HDFC, SBI, ICICI and PNB) are maintaining the CAR value above the limit prescribed by RBI. But, the significant rise in the performance is noticed in case of PNB and HDFC. All the banks are maintaining lower debt-equity ratio in both the periods which shows better performance of the banks.

However, significant mean differences are noticed in case of HDFC and PNB with regard to debt equity ratio in the two select time periods. The performance of all the four banks viz. HDFC, SBI, ICICI and PNB has significantly improved in two time periods with regard to advances to assets ratio. Noticeable differences are found in case of all the banks under study regarding average advances to assets ratio in two time periods. All the banks under study have managed to reduce net NPAs to net advances ratio and gross NPAs to total advances (except ICICI) ratio but the change has not been significant. With regard to average ratio of total investments to total assets, only SBI has shown insignificant improvement. With regard to net NPAs to total assets, only PNB has been able to reduce the same insignificantly. On the other hand, significant rise has been registered in case of ICICI on the same parameter.

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Table 4.1 a : Capital adequacy Ratio

BANKS	2002	2003	2004	2005	2006	Mean	Variance	2007	2008	2009	2010	2011	Mean	Var.	t-test	Sign.
HDFC	13.92	11.86	12.19	11.09	13.93	12.59	1.62	13.08	13.60	15.69	17.44	16.22	15.20	3.33	-2.22	0.09
ICICI	13.48	11.06	19.64	11.57	11.44	13.43	12.90	11	13.97	13.42	17.38	20.20	15.19	13.01	-0.64	0.55
SBI	14.58	12.51	11.49	12.79	13.35s	12.94	1.29	12.34	13.47	14.25	13.39	11.98	13.08	0.84	-0.17	0.86
PNB	8.81	10.79	10.31	10.24	10.7	10.17	0.63	12.29	13.46	14.03	14.16	12.42	13.27	0.77	-5.28	0.006

Source: Annual Reports of different Banks

Table 4.1 b : Debt Equity Ratio

Banks	2002	2003	2004	2005	2006	Mean	Variance	2007	2008	2009	2010	2011	Mean	Variance	t-test	Sign.
HDFC	8.23	10.32	13.08	14.17	10.08	11.17	5.80	10.62	8.76	9.75	7.78	8.22	9.02	1.33	1.74	0.01
ICICI	10.58	20.89	9.16	13.39	14.58	13.72	20.72	9.50	5.27	4.42	3.91	4.10	5.44	5.42	3.06	0.39
SBI	14.59	17.22	17.12	19.16	18.61	17.34	3.13	13.91	10.96	12.81	12.19	14.37	12.84	1.86	3.85	0.18
PNB	21.66	21.23	21.56	21.61	20.43	21.29	0.26	13.79	15.44	15.96	15.36	15.62	15.23	0.70	-12.60	0.00

Table 4.1c: Advances to Assets

Banks	2002	2003	2004	2005	2006	Mean	Variance	2007	2008	2009	2010	2011	Mean	Variance	t-test	Sign.
HDFC	29.75	32.20	29.51	29.69	28.61	29.95	0.002	51.45	47.62	53.95	56.56	57.68	53.45	16.45	-13.97	0
ICICI	34.39	30.22	30.29	35.63	44.02	34.91	0.10	56.82	56.43	57.56	49.86	53.26	54.78	10.28	-5.54	0.005
SBI	41.32	37.01	37.51	35.99	34.66	37.29	0.33	59.54	57.76	56.25	59.99	61.84	59.07	4.60	-16.65	0
PNB	40.30	41.12	41.70	44.15	47.09	42.87	0.05	59.47	60	62.65	62.91	63.99	61.80	3.85	-15.55	0

Table 4.2a: Gross NPAs to Net Advances

Banks	2002	2003	2004	2005	2006	Mean	Variance	2007	2008	2009	2010	2011	Mean	Variance	t-test	Sign.
HDFC	0.00	0.00	3.52	3.17	3.27	1.99	3.32	2.26	1.89	1.72	1.45	1.06	1.67	0.20	0.38	0.72
ICICI	0.00	0.00	0.00	5.82	10.85	3.33	24.00	5.31	4.97	3.11	1.55	4.64	3.91	2.45	-0.21	0.85
SBI	0.00	0.00	15.54	13.98	12.82	8.46	60.68	8.57	8.02	6.15	3.97	3.35	6.01	5.46	0.69	0.52
PNB	0.00	0.00	13.85	12.34	12.05	7.64	49.21	4.79	9.89	6.19	4.21	1.18	5.25	10.06	1.01	0.36

Table 4.2b: Net NPAs to Net Advances

Banks	2002	2003	2004	2005	2006	Means	Variance	2007	2008	2009	2010	2011	Mean	Variance	t-test	Sign.
HDFC	0.00	0.00	1.09	0.45	0.50	0.40	0.20	0.43	0.47	0.63	0.31	0.11	0.39	0.03	0.09	0.93
ICICI	0.00	0.00	1.53	2.19	5.48	1.84	5.05	1.02	1.55	2.09	2.12	1.11	1.57	0.27	0.24	0.81
SBI	0.00	0.00	6.41	6.03	5.63	3.61	10.96	1.56	1.78	1.63	1.72	1.79	1.69	0.009	1.30	0.26
PNB	0.00	0.00	8.52	6.74	5.32	4.11	15.40	0.76	0.64	0.17	0.53	0.85	0.59	0.069	1.92	0.12

Table 4.2c: Total Investments to Total Assets

Bank	2002	2003	2004	2005	2006	Mean	Variance	2007	2008	2009	2010	2011	Mean	Variance	t-test	Sign.
HDFC	39.62	44.34	49.04	45.75	50.40	45.83	17.99	43.92	45.71	37.57	38.59	25.57	38.27	62.28	1.65	0.17
ICICI	31.21	40.98	36.58	41.48	34.20	36.89	19.34	42.42	34.43	29.97	28.39	33.57	33.75	29.67	0.76	0.48
SBI	30.60	32.04	35.13	38.93	41.64	35.66	21.36	42.69	45.50	42.86	32.91	25.15	37.82	73.18	-0.37	0.72
PNB	39.96	40.09	40.83	39.56	38.65	39.18	0.63	20.11	41.15	40.13	28.25	24.16	30.76	89.75	0.78	0.47

Table 4.2d: Net NPAs to Total Assets

Banks	2002	2003	2004	2005	2006	Mean	Variance	2007	2008	2009	2010	2011	Mean	Variance	T-test	Sign.
HDFC	0.00	0.00	0.32	0.13	0.14	0.018	0.017	0.14	0.07	0.12	0.21	0.11	0.13	0.002	-0.17	0.87
ICICI	0.00	0.00	0.00	0.00	0.00	0	0	0.40	0.00	0.89	0.42	0.59	0.46	0.104	-3.18	0.034
SBI	0.00	0.00	2.40	0.00	0.00	0.48	1.15	1.57	0.00	1.16	0.99	1.01	0.946	0.334	-0.69	0.55
PNB	0.00	0.00	3.54	2.95	2.48	1.79	2.82	0.00	0.44	0.09	0.14	0.54	0.24	0.055	2.04	0.11

AN EMPIRICAL STUDY OF FINANCIAL PERFORMANCE OF IFFCO LIMITED - A COMPARATIVE ANALYSIS

D. Maheswara Reddy★

Financial performance is a familiar word in today's financial world, be it in the management, owners, lenders and general investors' perspective. And it is an out of financial statements analysis. Financial Decisions pertaining to planning and control must be made on the financial performance. Hence, financial performance forms the basis as one of the fundamentals to make any decision in effective manner. Indian Farmers Fertilizers Co-operative limited (IFFCO), today is a leading player in India's fertilizer industry and is making substantial contribution to the efforts of Indian Government to increase food grain production in the country. Indian farmers Fertilizers Cooperative Limited, popularly known as IFFCO emerged as a pioneer venture on the horizon of fertilizer production and marketing with the objective of attaining self-sufficiency in food grain production. In the light of its strategic importance in the nation interest, it is necessary to evaluate the financial performance of the IFFCO Limited. And this paper has been focused on operational control, profitability and solvency etc.

I. Introduction

Today a large section of people, who have minimum financial literacy, are eager to know the financial performance of the companies where their financial interest is vested. They may be as investors, managers, owners, lenders, consumers, employees, government and public at large. Financial performance is not readily available from the records and files in the organization. It has to be derived through financial statements analysis techniques. The use of technique is subject to the option of the user. The important techniques are; Ratio Analysis, Comparative statement analysis, Cross-section analysis, time series analysis, common size analysis, and DuPont Analysis. The usefulness of ratios depends on intelligent and skillful interpretation of the user. Here, the financial performance of IFFCO has been studied by using ratio analysis with a view to give meaningful interpretations for the stake holders of the selected company.

Company profile: Indian Farmers Fertilizer Co-operative Limited (IFFCO) was registered on November 3, 1967 as a Multi-unit Co-operative Society engaged in the production of fertilizer to help the farmers of India. During mid- sixties, the Co-operative sectoring India was responsible for distribution of 70 per cent of fertilizers consumed in the country. This Sector had adequate infrastructure to distribute fertilizers but had no production facilities of its own and hence they were dependent on public/private Sectors for supplies. Hence, to overcome this lacuna and

to bridge the demand- supply gap in the country, a new cooperative society i.e. IFFCO came into the picture. The society has grown in strength from a modest membership of 57 societies in 1967-68 to 39824 cooperative societies and 157 Farmers Service Centers of its own spread across 17 states namely, Jammu & Kashmir, Punjab, Haryana, Uttar Pradesh, Jharkhand, Rajasthan, Uttaranchal, Bihar, Madhya Pradesh, West Bengal, Goa, Andhra Pradesh, Tamil Nadu, Kerala, Karnataka, Assam, & Orissa. Today IFFCO is the largest producer of fertilizers in the country and the only Fertilizer Institution in the country to have surpassed 6 Million MT per annum in terms of production and 8 Million MT per annum in respect of sales. So we can say that IFFCO, to day, is a leading player in Indian fertilizer industry and is making substantial contribution to the efforts of Indian Government to increase food grain production in the country. The organization has production facilities at Aonla, Kandla, Phulpur, Kalol and the latest one at Paradeep.

Company's Vision: IFFCO's vision is "to augment the incremental incomes of farmers by helping them to increase their crop productivity through balanced use of energy efficient fertilizers, maintain the environmental health and to make cooperative societies economically & democratically strong for professionalized services to the farming community to ensure an empowered rural India."

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Company's Mission: "IFFCO's mission is to enable Indian farmers to prosper through timely supply of reliable, high quality agricultural inputs and services in an environmentally sustainable manner and to undertake other civilities to improve their welfare"

II. Review of Literature

Sreesha & Joseph (2011) SBI studied performance in banc assurance to the overall progress of the bank or not. The increase in the non-interest income, profit per employee, business per employee and decrease in the operating expense, staff cost, level of nonperforming asset by the bank for the last few years indicates that the financial performance of the state bank in banc assurance has been good and banc assurance has also contributed well to the overall progress of the bank.

Joseph Jelsy and Vetrivel, (2012) have studied the financial performance in connection with Activity Based Costing, and concluded that better cost predictions, loss making products are identified. The ABC can be used for cost cutting, Decision Support System (DSS) budgeting and better performance measurement in order to improve the financial performance of the companies.

Prasad and Reddy (2012) have explored the economic sustainability of five major banks in Indian banking sector by performance evaluation of public and private sector banks with the help of multi-variate analysis.

Reddy and Prasad (2011) their study has been revealed that the operational, financial, managerial performance of sample banks i.e Andhra Pragathi Grameena Bank and Saphthagiri Grameena Bank with the help of standard deviation, mean difference and t value.

Objectives of the Study

- To know the growth rate of the company in terms of turnover, PAT, share capital, net worth, net assets and investments during the study period
- To assess short and long-term solvency
- To assess the profitability
- To judge the utilization of its resources

III. Research & Methodology

The period of evaluating financial performance of IFFCO Limited ranging from 2006-07 to 2010-11 i.e. for five years. Secondary data is collected from annual reports of the

company and www.aceanalyzer.com. To analyze the data the standard tool ratio analysis is applied. For evaluating the financial performance and controlling the activities of the IFFCO Limited, the ideal norms are industry average ratios.

IV. Data Analysis & Findings

The growth of the selected company in terms of turnover, PAT, share capital, net worth, net assets and investments are furnished in the table 2.

It is observed from the table 2 that the growth rate of sales, profit, share capital and reserves & surplus over last five years are 105.18 per cent, 352.22 per cent, 0.71 per cent and 41.11 per cent respectively. The sales turnover increased to Rs.21195 crores in 2010-11 as against Rs. 16809 crores in 2009-10.

The financial performance of the IFFCO has been analyzed by grouping the financial ratios in four broad categories viz; Liquidity ratio, leverage ratio, profitability ratio and activity ratio.

Liquidity Ratios: Ratios are used to control the activities of the firms and measure the relationship between key elements at any point of time liquidity implies firm's ability to meet its debts in short run. Liquidity ratios measure the firm's ability to meet its maturing current obligations.

Current Ratio: Current ratio shows the short term financial position of the business. This ratio measures the ability of the firm to pay its current liabilities. The ideal current ratio is supposed to be 2:1 i.e. current assets must be twice the current liabilities. In case this ratio is less than 2:1 the short term financial position is not supposed to be very sound and in case, it is more than 2:1, it indicates idleness of working capital. The current ratio of IFFCO and Industry is presented in the table 2.

From the table 2 it has been observed that the current ratio of IFFCO has been more than its industry average throughout the study period except in the year 2008-09. The gross working capital is ups and down during the study period. The current ratio of IFFCO is above the standard norm (2:1) all the time and shows that the firm's ability to pay its current liabilities is sound enough. The current ratio of industry average holds good to standard norm of 2:1 throughout the study period. The current ratio of IFFCO and industry during the study period are; 5.05 (3.37) , 4.21 (2.67), 2.41 (1.88), 2.66 (2.32) and 5.81(2.17), respectively. Hence, the comparison of liquidity of IFFCO with industry average will give the exact results

and provides a way to the management to take corrective measures to control extreme deviations in the solvency position of the company.

Quick ratio: Quick ratio is calculated to work out the absolute liquidity of a business. This ratio measures the ability of the business to pay its current liabilities in a real way. The ideal quick ratio is supposed to be 1:1 i.e. quick assets must be equal to the current liabilities. In case, the ratio is less than 1:1 it shows a very weak short term financial position and in case it is more than 1:1 it shows a better short-term financial position. The current assets, current liabilities, inventory and current ratios were furnished in the table 3.

From the table 3 it is noticed that the quick assets ratio of IFFCO is more than double of standard norm i.e. 1:1 during the study period. The quick ratio of IFFCO and industry during the study period are; 3.19 (2.35) , 3.06 (1.82), 1.87 (1.39), 2.06 (1.77), and 4.79 (1.57) respectively. This indicates the healthy sign in its solvency position and if look at the other side it represents the ineffective financial management.

Leverage ratios: Which measure the extent to which a firm has been financed by debt. Suppliers of debt will look into equity as margin of safety, but owners would borrow o maintain control with limited investment. The return of owners is magnified, if the earnings on the borrowed funds more than the interest that has to be paid. It can be measured in any one of the following ways; Debt-Equity Ratio (DER), Debt to Total Assets Ratio (DTTAR), Interest coverage Ratio (ICR) and Fixed Charges Ratio (FCR). But in this paper DER has been applied.

Total Debt Equity Ratio: Debt to total funds (net worth) ratio shows the proportion of long term funds which have been raised by way of loans. This ratio measures the long term solvency position of the company and also provides an idea of the equity cushion for the long-term indebtedness. Normally debt to total fund ratio of 2:3 or 0.67 is considered as satisfactory. A higher proportion is not considered as good and it's an indication of early warning signal for insolvency of the company. The DER of IFFCO and industry for 2007-2011 were furnished in the table 4.

From the table 4, it is observed that the DER of IFFC and Industry are; 1.78(1.14), 1.84(1.36), 3.23(1.64), 2.7(1.73) and 2.29(1.05) respectively. By comparing these with industry averages, it can be concluded that the company is highly levered. During the 2006-07 to 2007-08 the IFFCO has been maintained the debt capital on par with the industry

average. Afterwards it has been to highest of 3.23 in the year 2008-09 and then started to decline to 2.29 in the year 2010-11. By observing over the study period it reveals that the company uses too much of debt in the year 2008-09. The same phenomenon has been reflected in the EPS of the company.

Profitability Ratio: - It measures the overall performance and effectiveness of the firm. It can be arrived by either on sales or investments. These are profit (gross or net) margin, net profit to total assets or ROI, Net profit after taxes to Net worth. But in this paper EPS has been used to measure the profitability of the company. The processed information about the EPS has been furnished in the table 5.

EPS (Earning per share): Earnings per share help in determining the market price of the equity share of the company. It also helps to know whether the company is able to use its equity share capital effectively while comparing with other companies in the industry. It also tells the investors about the capacity of the company with regards to dividend per share (DPS). The PADT, outstanding shares and EPS of IFFCO and PAT Growth % of IFFCO and Industry were furnished in the table 5.

From the table 5, it is observed that the profit after tax growth rate of IFFCO has been excelled over the industry growth rate throughout the study period. The average PADT growth % of IFFCO (72.10 per cent) is more than the PAT Growth % of industry (26.73 per cent). Hence, it can be inferred that the company overall performance is quite good over the industry performance in effective utilization of its equity share capital. While looking at EPS of the company, it can be understood that the EPS has been increased progressively during the study period.

Return on Capital Employed: Return on capital employed measures the profit, which a firm earns on investing a unit of capital. The profit being the net result of all operations, the return on capital expresses all efficiencies and inefficiencies of a business. This ratio has a great importance to the share holders and investors and also to the management. To shareholders it indicates how much their capital is earning and to the management as to how efficiently it has been working. This ratio influences the market price of the shares. The higher the ratio, the better it is. The processed information pertaining to the IFFCO and Industry were furnished in the table 6.

From the table 6, it is observed that the range of ROCE of IFFCO and Industry during the study period are; 2.53 (12.49), 3.5 (11.83), 3.12 (12.23), 4.15 (10.94) and 6.21

(19.38) respectively. The ROCE of IFFCO has been far away from the industry average during the study period slowly increasing where as the ROCE of industry. This means the company has not been utilized its total capital effectively as the industry can. This means the IFFCO has to striving towards to beat the industry average at an earliest otherwise the investors may withdrawn their investments from the company.

Activity Ratio: Activity ratios are employed to evaluate the efficiency with which the firm manages and utilizes its resources. These include Inventory turnover ratio, debtors turnover ratio and total assets turnover ratio. But in this paper DTR and ITR were applied to test the effectiveness of the company.

Debtor's turnover ratio: This ratio indicates the efficiency of the concern to collect the amount due from debtors. It determines the efficiency with which the trade debtors are managed higher the ratio, better it is as it proves that the debts are being collected very quickly.

Regarding IFFCO the debtor's turnover ratio is 58.08 which show the efficiency of the company to collect the amount due from debtors is excellent. In case of IFFCO the debtors are very less. The processed information pertaining to DTR and ITR of IFFCO were furnished in the table 7 and 8 respectively.

From the table 7, it is observed that the DTR is stable during 2006-07 to 2008-09 as 15.36, 14.42 and 18.14 times. But it was suddenly surged to 106.45 times from 18.14 times. This means the efficiency of the management has been improved a lot.

Inventory Turnover Ratio: The inventory turnover measures that how well the company can manage to sell its inventory. The purpose is to ensure the blocking of appropriate funds in inventory. If the company can quickly sell its inventory, the inventory turnover will be higher. Conversely, if the company cannot sell its inventory well, then the inventory turnover will be low. One has to watch this figure closely – if the inventory ratio climbs too high, then the company may be keeping too little inventory. The processed information of ITR of IFFCO has been furnished in the table 8.

Regarding IFFCO, the Inventory Turnover Ratio has increased due to increment in sales (in subsidy due to cost of production) while inventory has increased from previous year to this year. The inventory has been showing an increasing trend which is a good sign.

Findings:

After the analysis of the components of current assets & current liabilities and the trends of working capital, it was found that:

- ◆ Though the liquidity position (i.e. current ratio) of the company is good in creditor's perspective, but on the other hand it indicates that the huge amounts of funds are being blocked up in current assets.
- ◆ There are certain factors that affect the working capital and subsidy is the major factor which forms a greater part of the interest cost. Apart from this there are other factors like prices of raw materials, exchange rates, prices of raw materials in foreign country.
- ◆ The absolute liquidity position of the company is exceeding the standard norm (1:1) as well as industry average (i.e. ranges from 1.39-2.35) throughout the study period. Further this can be reflects the inefficient financial management.
- ◆ The long-term solvency of the company has been fluctuated (i.e. 1.78 to 3.23) with significant rate since the industry solvency position is stable (i.e. 1.14 to 1.73) during the study period.
- ◆ There should be an ineffective utilization of resources since the ROCE of the company is far away from the industry average.
- ◆ The DTR of the company reflecting the efficient collection management.

Suggestions & Conclusion

The company has to take an appropriate measure to keep CR and QR on par with the industry. Proper control over the leverage should be taken in order to magnify the rate of return (EPS) for the owners (shareholders). The ITR of the company needs to be improved still.

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Table 1: Share capital of IFFCO as on 31ST March, 2011

Details	Amount (Rs.Crores)
Authorized Share Capital	1000.00
Subscribed and Paid up Capital	425.95

Source: Annual reports of the company

Table 2: Growth of IFFCO Limited (Rs. Crores)

Years	2006-07	2007-08	2008-09	2009-10	2010-11
Turnover	10330	12163	32933.30	16808.57	21195.16
Profit before tax	251.25	380.52	441.95	567.28	1025.78
Income tax	76.23	122.93	81.94	166.18	234.29
Profit after tax	175.02	257.59	360.01	401.10	791.49
Share capital	422.92	423.93	426.28	426.24	425.95
Reserves & surplus	3218.9	3264.7	3532.59	3844.26	4542.09
Net worth	3641.8	3688.7	3958.87	4270.50	4968.04
Net assets employed	10662	10998	17303.77	16319.45	16737.31
Investments	740.46	1416.7	7552.95	7531.28	5157.19

Source: data compiled from annual reports of IFFCO Limited

Table 2: Current ratios of IFFCO limited & Industry

Year	CA (Rs in Crores)	CL (Rs in Crores)	CR	CR (Industry)
2006-07	6071.97	1201.23	5.05	3.37
2007-08	5775.74	1371.57	4.21	2.63
2008-09	7672.99	3182.89	2.41	1.88
2009-10	5822.51	2191.62	2.66	2.32
2010-11	7909.05	1362.31	5.81	2.17

Source: Data compilation from annual reports of IFFCO Limited and www.aceanalyzer.com

Table :3 Quick ratios of IFFCO limited

Year	CA (Rs in Crores)	Inventory	CL (Rs in Crores)	QR	QR (Industry)
2006-07	6071.97	2238.94	1201.23	3.19	2.35
2007-08	5775.74	1577.1	1371.57	3.06	1.82
2008-09	7672.99	1731.36	3182.89	1.87	1.39
2009-10	5822.51	1301.14	2191.62	2.06	1.77
2010-11	7909.05	1384.18	1362.31	4.79	1.57

Source: Data compilation from annual reports of IFFCO Limited and www.aceanalyzer.com

Table 4: Debt Equity Ratios (DER) of IFFCO Limited & Industry

Year	DER	DER (Industry)
2006-07	1.78	1.14
2007-08	1.84	1.36
2008-09	3.23	1.64
2009-10	2.7	1.73
2010-11	2.29	1.05

Source: Authors own calculations from annual reports and www.aceanalyzer.com

Table : 5 EPS of IFFCO and PAT Growth % of IFFCO and Industry

Year	PADT	PADT Growth % (IFFCO)	PAT Growth % (Industry)	No. of shares	EPS
2006-07	90.57		-0.25	422.92	0.21
2007-08	173.06	91.08	-3.47	423.93	0.4
2008-09	274.91	58.85	22.18	426.28	0.64
2009-10	315.92	14.91	39.26	426.24	0.74
2010-11	706.31	123.57	75.95	425.95	1.65

Source: Annual reports of IFFCO Limited and www.aceanalyzer.com

Table: 6 ROCE of IFFCO Limited

Year	ROCE %	ROCE % (Industry)
2006-07	2.53	12.49
2007-08	3.5	11.83
2008-09	3.12	12.23
2009-10	4.15	10.94
2010-11	6.21	19.38

Source: Annual reports of IFFCO Limited and www.aceanalyzer.com

Table 7: DTR of IFFCO Limited

Year	Sales	Avg. debtors	DTR
2006-07	5554.53	361.68	15.36
2007-08	5968.47	413.76	14.42
2008-09	7387.7	407.23	18.14
2009-10	7247.3	68.08	106.45
2010-11	8524.94	146.77	58.08

Source: Annual reports of IFFCO Limited

Table 8: ITR of IFFCO Limited

Year	Inventory	Sales	ITR
2006-07	2238.94	5554.53	2.48
2007-08	1577.1	5968.47	3.78
2008-09	1731.36	7387.7	4.27
2009-10	1301.14	7247.3	5.57
2010-11	1384.18	8524.94	6.16

Source: Annual reports of IFFCO Limited

A STUDY OF CUSTOMER SATISFACTION TOWARDS ATM SERVICES IN WARANGAL DISTRICT

N. Ramesh Kumar★ Gandham Raju★★

This study is undertaken to measure the level of satisfaction of ATM customers towards different services provided by the banks. The objectives of the empirical study are to measure the customer satisfaction regarding different aspects like physical location of ATMs, problems solving mechanism, bank charges, availability of number of ATMs and the overall satisfaction. The study is purely based upon primary data. The primary data were collected by administering a structured questionnaire. For this purpose 200 sample respondents were selected in Warangal district by adopting convenience sampling method. The statistical tools such as percentage analysis, Garrett's ranking analysis, Likert's scaling technique and ANOVA analysis were used which are appropriate to this study. The results show that majority of ATM customers are satisfied overall towards different services provided by the banks.

I. Introduction

ATM (Automated Teller Machine) were the first well-known machines to provide electronic access to customers. With the advent of Automatic Teller Machines, banks are able to serve customers outside the banking hall. ATM is designed to perform the most important function of a bank. It is operated by plastic card with its special features. The plastic card is replacing cheque, personal attendance of the customer, banking hours restrictions and paper based verification. ATMs have made hard cash just seconds away all throughout the day in every corner of the globe. ATMs allow us to do a number of banking functions such as withdrawing cash from one's account, making balance inquiries and transferring money from one account to another using a plastic, magnetic-strip card and personal identification number issued by the financial institution.

Customer Satisfaction

Philip Kotler, the popular marketing theorist says that the customer satisfaction occurs, when the perception of the reward from the purchases of goods and services by the customer meets or exceeds his/her perceived sacrifice. The perception is a consequence of matching past purchase and consumption experience with the current purchase.

In the recent past, banking industry of India has been changing from a sluggish and government-dominated sector to a much more competitive and profitable one. Many foreign banks have entered the fray due to which the competition increased among commercial banks. In order to get a competitive edge and to attract more number of

customers, banks are focusing on providing better services to their customers.

The banking sector has undergone a major change due to the adoption of electronic banking (e-banking), one of the latest channels of distribution being used in the financial service organizations. This method was established in the mid 1990s & thereafter became more important. Electronic banking can offer speedier, quicker and dependable services to the customers than that of manual system of banking leading to customer satisfaction. This kind of banking system not only generates latest viable return, but also it offers better dealings with customers. The most widely used e-banking instrument is the automatic teller machine (ATM) card.

ATMs have gained prominence as a delivery channel for banking transactions in India. Banks deploy ATMs to increase their reach. As far as the customer satisfaction is concerned with regard to e-banking services, ATM services play a vital role as they make banking transactions easy for customers.

The expectations of the customers from the banks are growing from mere customer-satisfying level to customer-delight levels. To reach these ever changing heights of

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customer expectations, the banks need to understand the customers' existing satisfaction level better. Hence, this study is undertaken to measure the customer satisfaction towards ATM services provided by different banks.

Objectives of the Study

The main objective of the study is to measure the level of satisfaction of customers towards different ATM services provided by the banks in Warangal district. Various objectives can be summarized as mentioned below.

- To measure the overall satisfaction of customers towards ATM services provided by different banks in the select city.
- To study the problems/difficulties faced by the customers while utilizing ATM services of different banks.
- To assess the level of satisfaction of customers towards the location of ATMs.
- To find out the level of satisfaction of the customers towards the bank charges for ATM services.
- To study the satisfaction of the customers regarding the number of ATMs available in Warangal district.

II. Review of Literature

Ajay Bimbhit(2008) revealed that customers would expect security of money, growth, safety and respectful listening from their banks. Al-Hawarietal(2006)enlisted five major aspects regarding quality of ATM service which include functions of ATM, convenience of location, secured location, adequate number of machines and user friendliness. Davies et al., (1996) conducted a study which reveled that costs and efficient functioning are the factors which influence the customers' satisfaction on ATM services. Johnson.A.Edosomwan(1993)wrote in his book that a satisfied customer would recommend excellent products and services to their friends and help the enterprise to increase its market share and profitability. Khan (2010)found that the important factors which play a role in the service quality of automated banking namely reliability, ease of use, privacy, convenience and responsiveness. Lovelock (2000) found in his study that secured and convenience location, adequate system and functionality of ATM are the crucial factors for the customer satisfaction. Malarvizhi (2011) conducted a study in Coimbatore city and found that demographical factors play a role in customer satisfaction regarding ATM services. Among these demographical factors age was found to be more crucial. Yi (1990) conducted a study entitled "A Critical

review of consumer satisfaction." which revealed that customer satisfaction is a collective result of perception, evaluation and psychological reactions to the consumption experience with a product.

III. Research Design & Method

The study is purely based on primary data. The primary data was collected by using a structured questionnaire. The present study is related to customers of different banks having ATM cards. To study the customers' satisfaction towards different services provided by the ATMs, 200 sample respondents were selected in Warangal district by adopting convenience sampling method. The sample consists of people such as businessmen, government employees, private employees, and others.

Statistical tools applied: The statistical tools such as percentage analysis, Garrett's ranking analysis, Likert scaling technique and ANOVA analysis were used which are appropriate to this study.

Period of study: The study was conducted from March 2012 to June 2012.

Area of study: The area of study is confined to Warangal district.

Hypothesis: There is no significant association between the demographical factors namely Age, Gender, Education, Occupation, Income and Overall satisfaction level of customers of ATM.

IV. Results & Discussion

Table-2 shows that 47% of respondents are self motivated towards acquiring an ATM card. Table-3 shows that 64% of the respondents are satisfied with the availability of number of ATMs. 62.5% of the respondents have experienced inconvenience due to ATM being out of order (Table-4). Majority of the respondents (46.4%) experienced problems with ATM once in a month (Table-5). 42.4% of the respondents reported that the ATM machine was repaired in a day if any problem (Table-6). 51.5% of the respondents have not faced any problem while using the ATM (Table-7). 51% of the respondents approached the bank with ATM related problems (Table-8). Table-9 indicates that the bank staff is courteous towards 69% of the respondents when they approached the bank with ATM related problems. 68% of the respondents have expressed their satisfaction towards the maintaining of denomination of currency in the machine (Table-10). 75% of the respondents are dissatisfied due to

the availability of the currency only in higher denominations (Table-11). 51% of the respondents felt inconvenience while transacting at ATM center (Table-12). 80% of the respondents felt inconvenience while using the machine due to lack of privacy inside the ATM center (Table-13). 75.5% of the respondents were using their ATM cards in other bank ATMs (Table-14). Garrett's ranking analysis is used for knowing the level of customer satisfaction regarding solving the ATM problems, ATM location, bank charges and overall satisfaction. The overall satisfaction of the customer secured highest rank with the mean weight 3.73 followed by the satisfaction on solving the ATM problems with 3.51 (Table-15). Table-16 depicts the relationship between the opinion of customer regarding overall satisfaction and the different demographical factors.

By applying One-way ANOVA test, it is revealed that age, education, gender, occupation and income of the respondents are not significantly associated with the overall satisfaction.

Key Findings

Based on the empirical study, analysis and interpretation of data, the important findings are presented below.

- 79% of the respondents using the ATM services in Warangal district are satisfied overall with services provided by the bank.
- 67% of the respondents are satisfied with the ATM related problem-solving mechanism of the banks.
- 63% of the respondents are satisfied with the physical location of the ATM centers.
- The overall satisfaction of the customers on ATM services of the bank has no relation with the demographical factors like gender, age, occupation, educational qualification and income of the respondents.

V. Conclusion

From this study, it can be concluded that the customers are overall satisfied regarding the different ATM services provided by the banks. It is further inferred from the study that the customers are self motivated arguing for banking ATM cards. The customers are reasonably satisfied with the availability of number of ATMs, denomination of currency in the machines. The machine is repaired in a day if any problem occurs. The bank employees were courteous to the ATM customers when they approach the bank with any ATM related problem.

Suggestions

As per the study and based on the opinion of the respondents the following suggestions can be made.

- The banks are suggested to concentrate more on improving the quality of network to avoid the failure of transactions.
- It is suggested to the banks to take more care on making the paper available at all times for printing transaction-slips.
- The banks are suggested to take measures to further improve the privacy and security environment at the ATM centers.
- It is advised to take measures to make the ATM bank charges more competitive.

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Table 1: Profile Of The Sample Respondents

S.No	Demographical Factors	No. of Respondents	%age
1	Gender		
	Male	109	54.5
	Female	91	45.5
	Total	200	100
2	Age		
	Below 30 yrs	64	32
	31 to 40 yrs	54	27
	41 to 50 yrs	49	24.5
	Above 50 yrs	33	16.5
	Total	200	100
3	Educational Qualification		
	Illiterate	42	21
	Up to 10th class	62	31
	Interan degree	33	16.5
	Above degree	63	31.5
	Total	200	100
4	Occupation		
	Business	50	25
	Government employee	30	15
	Private employee	60	30
	Others	60	30
	Total	200	100
5	Income		
	Below 10000	45	22.5
	10001 to 25000	35	17.5
	25001 to 50000	65	32.5
	Above 50001	55	27.5
	Total	200	100

Table 2: Motivator Of Customers for taking the Bank ATM card

S.No	Motivator	No. of Respondents	%Age
1	Bank	36	18
2	Friends	34	17
3	Self Motivation	94	47
4	Family Members or Others	36	18
	Total	200	100

Table 3: Satisfaction of Customers Regarding Number Of ATMs

S.No	Particulars	No. of Respondents	% Age
1	Yes	128	64
2	No	72	36
	Total	200	100

Table 4: Whether Customers Felt Inconvenience Due To Machine Not Working

S.No	Felt Inconvenience	No. of Respondents	%age
1	Yes	125	62.5
2	No	75	37.5
	Total	200	100

Table 5: Frequency Of The Problem To The Customers With ATM

S.No	Frequency	No. of Respondents	%age
1	Once in a week	28	22.4
2	Once in a month	58	46.4
3	Very Frequently	16	12.8
4	Frequently	23	18.4
	Total	125	100

Table 6: Table 6: Customers Opinion On Time Taken To Repair The Machine

S.No	Time	No. of Respondents	%age
1	One or 2 Hours	17	13.6
2	Half a day	32	25.6
3	One day	53	42.4
4	More then 1 day	23	18.4
	Total	125	100

Table 7: Whether the Customers Faced Any Problem with ATM While Using It

S.No	Faced Problem	No. of Respondents	%age
1	Yes	97	48.5
2	No	103	51.5
	Total	200	100

Table 8: Whether the Customers Approached Bank With ATM Problem

S.No	Approached	No. of Respondents	%age
1	Yes	102	51
2	No	98	49
	Total	200	100

Table 9: Whether The Bank Staff Were Courteous With Customers When Approached

S.No	Courteous	No. of Respondents	%age
1	Yes	70	69
2	No	32	31
	Total	102	100

Table 10: Whether Customer Satisfied Regarding The Denomination Of Currency Available In ATM

S.No	Denomination	No. of Respondents	%age
1	Yes	136	68
2	No	64	32
	Total	200	100

Table 11: Reasons For Dissatisfaction On Denomination Of Currency Available At ATM

S.No.	Reasons	No. of Respondents	%age
1	Only higher denomination	48	75
2	Only lower denomination	16	25
	Total	64	100

Table 12: Whether Customers Faced any Inconvenience While Using The Card At The ATM Centre

S.No	Faced Inconvenience	No. of Respondents	%age
1	Yes	102	51
2	No	98	49
	Total	200	100

Table 13: Reasons For Customers Inconvenience At ATM Center While Using ATM Card

S.No	Reasons	No. of Respondents	%age
1	No privacy	82	80
2	Others	20	20
	Total	102	100

Table 14: Usage Of The Card In Other Bank ATMs

S.No	Whether Using	No. of Respondents	Percentage
1	Yes	141	70.5
2	No	59	29.5
	Total	200	100

Table 15: Level Of Customers Satisfaction Regarding Solving The ATM Problem, Towards Location Of ATMs, Bank Charges And Overall Satisfaction

S.No	Particulars	1	2	3	4	5	Mean Weight	Rank
1	Satisfaction on solving the ATM problems	8	6	20	62	6	3.51	II
2	Satisfaction towards ATM location	16	17	41	106	20	3.48	III
3	Satisfaction towards bank charges	12	32	42	101	13	3.36	IV
4	Overall satisfaction	7	8	27	148	10	3.73	I

The above ratings have been obtained using a 5' point rating scale as shown here 1=Highly dissatisfied, 2=Dissatisfied, 3=Neutral,4=Satisfied,5=Highly satisfied.

Table-16: Relationship between the opinion of customer regarding overall satisfaction and the different demographical factors

Variables		Sum of Squares	df	Mean Square	F	S/NS
Age	Between Groups	100	3	33.33	0.132	NS
	Within Groups	4036	16	252.25		
	Total	4136	19			
Education	Between Groups	133	3	44.33	0.147	NS
	Within Groups	4825	16	301.56		
	Total	4958	19			
Gender	Between Groups	32	1	32	0.033	NS
	Within Groups	7664	8	958		
	Total	7696	9			
Occupation	Between Groups	120	3	40	0.149	NS
	Within Groups	4306	16	269.13		
	Total	4426	19			
Income	Between Groups	100	3	33.33	0.102	NS
	Within Groups	5230	16	326.875		
	Total	5330	19			

Level of Significance=5%; S-Significant; NS-Not Significant;

IMPACT OF WORKING CAPITAL MANAGEMENT ON FIRM'S PROFITABILITY & LIQUIDITY: AN EMPIRICAL STUDY OF COAL INDIA LTD (CIL)

Titto Varghese★

The efficient management of working capital plays a crucial role in the successful functioning of a firm.. Firm should always keep monitoring the liquidity position as it projects the company's credit image. Lack of liquidity can create a bad image among the parties interested in the firms functioning. Also firm must ensure that there should be a proper balance between current assets and current liabilities , as it can affect the profitability of the firm. For making the analysis of Liquidity-profitability relationship of CIL, ratio analysis techniques of Financial Management have been used. By observation of this it can be seen that even though the liquidity position was not strong, the profitability position of CIL is not up to the desired level. The short term solvency position of the firm must be strengthened so that it is able to meet its obligations timely. These things facilitate the maximization of the wealth of the firm. From this study it can be concluded that there is no significant difference in the profitability & liquidity position of the company because it has been seen that the liquidity position was strong were as the profitability position was not satisfactory. The risk factor of the firm is high as compared to profitability. The total risk of the firm is also high as compared to the ROCE, which was not worthwhile for the future prospects of the firm. it must generate higher returns from its existing assets of the firm.

I. Introduction

The Management of fixed assets and current assets has a great impact on future return and risk of the company. Managing fixed assets will help the concern in long term decisions. The current assets are the assets which can be used by the company to meet their short term obligations. Working capital refers to the firm's investment in short term assets i.e. cash, short-term securities, debtors etc. it is the fund needed to meet the day-to-day expenses. So it is vital ingredient to the business as the blood is to the human body.

There are two concepts of working capital: Gross Working Capital and Net Working Capital. The former means the firm's investment in current assets and later the excess of current assets over the current liabilities. Since the elements of working capital are short term in nature constant monitoring must be done for proper management. Working capital can also be defined as the working expenses that get blocked in current assets along the productive line of an enterprise. The Net Working Capital is that liquidity which takes care of the working expenses.

The working capital requirement of a firm will depend upon its operating cycle. It is a cycle having a continuous series of steps for conversion of sales into cash. The working capital is required maintaining its liquidity in day-to-day

operation to ensure it's smooth running and meets its obligation (Eljelly, 2004). Yet, this is not a simple task since managers must make sure that business operation is running in efficient and profitable manner. There are the possibilities of mismatch of current asset and current liability during this process. If this happens and firm's manager cannot manage it properly then it will affect firm's growth and profitability. This will further lead to financial distress and finally firms can go bankrupt.

Working Capital management

A firm should maintain adequate level of working capital to meet the current obligations to maintain uninterrupted business operation. Firm should always keep monitoring the liquidity position as it projects the company's credit image. Lack of liquidity can create a bad image among the parties interested in the firms functioning. Also firm must ensure that there should be a proper balance between current assets and current liabilities , as it can affect the profitability of the firm. Greater investment in idle current assets can result in decrease in profitability.

So the goal of working capital management is to ensure that the firm is able to continue its day-to-day operations and it has the sufficient ability to satisfy its present and

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future short term expenses. There should be proper proportion between the level of current assets and current liability. So an efficient working capital management will enable the concern to maintain a good balance between the liquidity and profitability. Ezra Solomon states that “liquidity measures a company's ability to meet expected as well as unexpected requirement of cash to expand its assets, reduce its liabilities and cover up an operating losses”.

Risk-Return trade off

Every financial Decision has different degree of risk. Return and Risk are directly proportional, as a higher degree of risk can lead to higher return and vice-versa. Risk return trade off in an enterprise can be sustained by maintaining a proper balance between liquidity and profitability. Liquidity in a firm represents the amount of investment in current assets and profitability the productivity of these current assets. Higher investment in unproductive current assets can lead to decrease in profitability. Working capital is to achieve desired trade off between liquidity and profitability (Smith 1980; Rehman & Nasr, 2007). Referring to theory of risk and return, Investment with more risk will result to more return. Thus, Firm's with high liquidity of working Capital many have to low risk then low Profitability. Conversely, Firm that has low liquidity of working capital facing high risk results to high Profitability. The issue here is in managing working capital, Firm must take into consideration all the items in both accounts and try to balance the risk and return. So a proper management of Net Working Capital will ensure a good risk-return proportion.

Justification of the Topic

Proper management of working capital is required to ensure that the firm is able to continue its day-to-day operations and it has the sufficient ability to satisfy its present and upcoming short term expenses. The working capital position helps the investors, creditors, bankers, suppliers, financial institutions, government etc. judge the stability of the enterprise. The financial institutions and individuals may be interested in investing in that company which is financial strong to meet its present and upcoming short term expenses. Well maintained working capital will help to create good creditors image, avoid unwanted borrowing, healthy government support etc. An efficient working capital management will only help a firm to compete in the present global market. Working capital is the life blood and nerve centre of business. Just as circulation of blood is essential in the human body for maintaining life, working capital is very essential to maintain the smooth running of the

business. No business can run successfully without an adequate amount of working capital. Working capital plays a vital role in the impact of the business. So there exist a number of implication and gaps for enquiry into working capital management of companies; against this background a study was conducted on the Working Capital position of CIL Limited.

II. Review of Literature

Smith (1973) stated that the profitability and liquidity are the dual financial goals for a firm and a balance between the same needs to be maintained. Gitman et al., (1979) with time and technology however, more and more sophisticated techniques are available to make the working capital cycle more efficient. Richards and Laughlin (1980) provided us the operating cycle concept which took into consideration both cash inflows and outflows that occur in the realm of working capital management.

Gentry et al (1985) innovated on the concept of weighted cash conversion cycle (WCC) which measures the weighted number of days funds are tied up in receivables, inventories, and payables, less the weighted number of days cash payments are deferred to Suppliers. Arcelus & Srinivasan (1993) integrated the main components of working capital management within a discounted cash flow framework. To study the interplay amongst inventory, procurement, cash discounts, accounts payable and accounts receivable. Ball, et al., (1993) has established that the cash flows of the components of working capital are better predictors of growth and future earnings than the traditional cash flows.

Moss and Stine, (1993) Corporate liquidity is examined from two distinct dimensions: static or dynamic views. The static view is based on commonly used traditional ratios such as current ratio and quick ratio, calculated from the balance sheet amounts. These ratios measure liquidity at a given point in time whereas dynamic views measure on going liquidity from the firm's operations. As a dynamic measure of the time it takes a firm to go from cash outflow to cash inflow which is measured by cash conversion cycle.

Burgstahler & Dichev (1997) found the evidence that the two components of earnings, viz, cash flow from operations and working capital changes can be used effectively to manage earnings and to increase them. Andrew & Sirkin (2003) highlights the importance of innovating through working capital management and the operations to generate cash rather than simply product development. Ward (2004) calculates the operating capital (cash) is out

of reach for use by your business. The speedier your cash – to-cash cycle, the fewer days your cash is available for the use in propelling your value stream. You can use this metric to gauge whether you are operating “lean” with regard cash. Also, good performance on the cash-to-cash measurement has been associated with improved earnings per share.

Bonamyong (2005) highlighted that a company with a lower cash conversion cycle is more efficient because it turns its working capital over more times in a year, which means it generated more sales per unit of money invested in working capital management.

Garcia-Teruel and Martinez-Solano (2007) in their Study demonstrated that managers can create value by reducing their inventories and shortening the number of days for which their accounts are outstanding. Gupta (2010) observed that better working capital can significantly help companies improve their growth rates vis-à-vis competitors and ultimately increase the wealth of their share holders.

III. Research Design & Methodology

In this study the sample company named CIL has been taken for analysis of Working Capital position. Present study is based on secondary data i.e. published annual reports of the company. These financial data's are edited, classified and tabulated as per the requirements of the study. This study has covered 10 years data's from 2004 to 2013 for analyzing the Working Capital position of CIL Ltd.

The Liquidity and Profitability position have been measured to analyze the Working Capital position of CIL. The collected data have been analyzed by the various ratios for finding liquidity and profitability. For assessing the behavior of above ratios, Regression Analysis, Spearman's Rank Correlation Co-efficient and Student t-test has been used.

Company profile

Coal India Limited (CIL) as an organized state owned coal mining corporate came into being in November 1975 with the government taking over private coal mines. With a modest production of 79 Million Tonnes (MTs) at the year of its inception CIL today is the single largest coal producer in the world. Operating through 81 mining areas CIL is an apex body with 7 wholly owned coal producing subsidiaries and 1 mine planning and Consultancy Company spread over 8 provincial states of India. CIL also fully owns a mining company in Mozambique christened as 'Coal India Africana Limitada'. CIL also manages 200 other establishments like workshops, hospitals etc. Further, it also owns 26 technical & management training institutes

and 102 Vocational Training Institutes Centres. Indian Institute of Coal Management (IICM) as a state-of-the-art Management Training 'Centre of Excellence' - the largest Corporate Training Institute in India - operates under CIL and conducts multi disciplinary management development programmes.

CIL having fulfilled the financial and other prerequisites was granted the Maharatna recognition in April 2011. It is a privileged status conferred by Government of India to select state owned enterprises in order to empower them to expand their operations and emerge as global giants. So far, the select club has only five members out of 217 Central Public Sector Enterprises in the country.

Objectives of Study

This study has the following objectives:-

- i. To analyze the Working capital position of CIL.
- ii. To analyze the effect of liquidity on profitability
- iii. To analyze the effect of risk on profitability.
- iv. To give suggestions on the basis of findings of the study.

Hypotheses of the Study

This study is based on the following null hypotheses (H₀):

- i. There is no significant difference between liquidity and profitability of CIL during the period of study.
- ii. There is no significant difference between risk and profitability of CIL during the period of study.

IV. Results & Discussion

For making the analysis of Working Capital position of CIL Ltd, some ratio analysis techniques of financial management have been used.

Liquidity

Working Capital Position

Gross Working Capital and Net Working Capital. The former means the firm's investment in current assets and later the excess of current assets over the current liabilities. The excess of current assets over the current liabilities provides measures of safety margin available against uncertainty in realization of current assets and flow of funds. See Table 1.

Table 2: shows the working capital position of the concern. During the period of study working capital showed a fluctuating tendency. The highest value of working capital

Rs.62022.38 Crores was in last year 2012-13 and least of Rs.3366.67 Crores in 2006-07. The net working capital had an average value of 20771.31 Crores. The Gross Working capital of the firm had a mean value of Rs. 43259.88 Crores. Gross Working Capital was highest in 2012-13 and least in 2003-04 with values of Rs. 99692.20 Crores and Rs.9995.58 Crores respectively. The Current liability of the firm was highest in 2009-10 with Rs. 41431.65 Crores and least in 2003-04 with Rs.4226.38 Crores. The Gross working capital had an average annual growth rate of 89.74% and standard deviation of 33233.51. The Net working capital of the firm had an average annual growth rate of 97.51% and a high standard deviation of 224403.07.

Current Ratio: Liquidity ratio is defined as the ratio of current assets to current liabilities. It is an index of technical solvency and an index of the strength of the working capital. A high current ratio is an assurance that a firm will have adequate funds to pay current liabilities and other current payments. It can be calculated as follows:

$$= \text{Current Assets} / \text{Current liabilities}$$

Table II: Shows the current ratio as a measure of liquidity position. During the period of study it was observed that current ratio had a current ratio of above 1, The Highest ratio of 2.65 times was observed in the year 2012-13 and the least of 1.18 in the 2008-09. The current assets and current liabilities showed a fluctuating trend throughout the study. The Average annual Growth rate of Current assets and Current liabilities was 89.74% and 65.94% respectively. The Current Ratio showed a varying trend with an average ratio of 2.04 times with an average annual growth rate of 0.99%. The standard deviation of the ratio was low with a value of Rs. 0.69.

Liquid Ratio or quick ratio: It is the ratio which shows the relationship between liquid assets and current liabilities. It firm's capacity to pay its obligation at time of emergency situation. The ideal ratio is 1:1 Times. The ratio can be expressed as given below:

$$= \text{Liquid Assets} / \text{Current liabilities}$$

Where Liquid Assets = Current Assets - (Stock + Prepaid Expenses)

Interpretation

The table 3 shows the liquidity ratio of the firm during the period of study. The ratio had the highest value of 2.77 times in the year 2007-08 and the least of 1.09 times in 2008-09. During the period of study this ratio also observed a fluctuating tendency. The liquid assets of the firm were

highest in 2012-13 and least in 2001-02 with values of Rs.94074.37 Crores and Rs.9960.76 Crores respectively. The liquid assets had an average value of Rs.40709.41 Crores with an average annual growth rate of 84.44%. The liquidity ratio had an average value of 1.97 times with an average annual growth rate of 0.50%. The standard deviation of the ratio was very low with a value of 0.67.

Cash Position Ratio: It shows how much of total assets is kept in the form of cash is revealed through this ratio. How much per rupee of total assets is kept in the form of cash. Higher the ratio shows less risk, but lower rate of return as cash by itself does not earn profit. The ratio can be denoted as given below:

$$= (\text{Cash} + \text{Cash Equivalents}) / \text{Total Assets}$$

Interpretation

The table 4 shows the cash generating capacity of the total assets of the firm. Cash position ratio also showed similar fluctuating tendency like the above ratios. It had a mean value of 0.40 times with an average annual growth rate of 10.01%. The highest ratio of 0.55 times was observed in 2009-10 and least of 0.20 in 2006-07. The firm maintained the highest cash of Rs.58202.78 Crores in 2011-12 and the least of Rs.3728.98 in 2006-07. Cash had an average value of Rs.26993.25 Crores with an average annual growth rate of 93.22%. The Total Assets of the firm had a mean value of Rs.57263.25 Crores with an average annual growth rate of 53.26%. Total Assets of the firm was highest in 2012-13 and least in 2001-02 with values of Rs.121564.80 crores and Rs.6964.49 Crores. The ratio had a very low degree of standard deviation with value of 0.14.

Working Capital Turnover ratio: This ratio reveals the overall picture of the operational capital necessary for maintaining a level of its sales. Higher ratio indicates quick conversion of working capital into sales. Also greater the ratio, shorter is the working capital cycle and better is working capital management. It can be expressed as follows:

$$= \text{Annual Sales} / \text{Average Working Capital}$$

Interpretation

The table 5 shows the sales generated per amount of working capital of the firm. This Ratio also showed a fluctuating tendency during the period of study. The Ratio had an average value of 2.11 times with a negative average annual growth rate of 500.27%. Net Working Capital turnover ratio observed the highest value of 5.46 times in 2008-09 and least of 0.02 times in 2003-04. The highest

average sales of Rs.68302.74 Crores was in 2012-13 and the least of Rs.124.51 Crores in 2003-04. Average annual sales had a mean value of Rs.32986.63 Crores with an average annual growth rate of 5476.77%. The Ratio had a high standard deviation of 2.02. ANALYSIS OF LIQUIDITY, PROFITABILITY AND RISK USING SPEARMAN'S RANK CORRELATION AND STUDENT T-TEST

Spearman's rank correlation is the relationship between different rankings of the same set of items. A rank correlation coefficient measures the degree of similarity between two rankings, and can be used to assess its significance.

$$r = 1 - \frac{6 \sum D^2}{n(n^2 - 1)}$$

Where $D = R_1 - R_2$,

$R = \text{Rank}$

Student t – Distribution is a small test used for testing of hypotheses of sample size less than 30. If the calculated value of t is less than the table value. The null hypotheses will be accepted and vice-verse; for a given significance level. It can be calculated as follow:

$$t = \frac{r \sqrt{n-2}}{\sqrt{1-r^2}}$$

Where $r = \text{Spearman's Rank Coefficient of Correlation}$
 $n = \text{No. Observation}$

Liquidity & Profitability Analysis of CIL using Student t-test

Profitability: It indicates the percentage of return in the business. A high Return on Investment shows the company is having a higher rate of profit as percentage of capital employed. It is calculated as follows:

$$= (\text{Operating Profit} / \text{Capital Employed}) \times 100$$

Interpretation

During the period of study the operating profit ratio showed a fluctuating trend. The operating profit ratio had the highest value of 11.11% in 2003-04 and the least of 0.19% in 2004-05. The operating profit ratio had a mean value of 3.60% with an average negative annual growth rate of -9.67%. The Standard Deviation of the ratio was moderate with a value of 5.35. The firm employed the highest amount of capital Rs.83894.94 Crores in 2012-13 and least of Rs.-2059.15 Crores in 2006-07. The Capital employed of the firm had a mean value of Rs.34087.17 Crores with an average annual growth rate of 58.65%. Please see table 6.

Relation between Liquidity and Profitability

Testing of Ist Null Hypothesis

Interpretation

The current ratio is used as an indicator of liquidity and ROCE as for measuring profitability. The Spearman's rank coefficient of correlation (r) between Current Ratio and ROCE has been shown for which the relevant formula has been used. The test used for determining significance of r is "t" test. The Spearman's rank coefficient of correlation (r) between ROCE & Risk Factor has been calculated. The "t" test is applied for determining significance of r. Then computed value of 't' has been compared with the tabulated value of 't'. See table 7.

In the above table $r = 0.12$ and value of $t = 0.343$. The table value of 't' at 5% level of significance for 8 degrees of freedom (Where $n = 10$) is equal to 2.305. Since the computed value of t is less than the table value the null hypothesis (Ho) is accepted.

Profitability & Risk analysis of CIL

The risk associated with the concern can be calculated by the following method:

$$R_k = \frac{(E + LTL) - FA}{CA}$$

Where $R_k = \text{risk}$

$E = \text{Equity} + \text{Reserve} \% \text{ Surplus}$

$L = \text{Long term loan}$

$FA = \text{Fixed Assets}$

$CA = \text{Current assets}$

In the aggressive approach the current assets are financed by short term sources and in case of conservative approach the current assets are financed by both long term and short term sources. The risk faced by the firm can be measured with the above formula

Interpretation

Table 5 shows the measure of liquidity. During the period of Study concern's highest risk of 119.66% generated a return of 11.11% and the least risk of 21.20% generated a return of 0.15%. The risk taken by the company showed a variation in its value with high deviation of 38.95. The average risk taken by the company was 57.94% with a negative average annual growth rate of -7.01.

Testing of IInd Null Hypothesis

Interpretation

The Spearman's rank coefficient of correlation (r) between ROCE & Risk Factor has been calculated. The "t" test is applied for determining significance of r. Then computed value of 't' has been compared with tabulated value of 't'.

In the above table $r = 0.58$ and value of $t = 2.03$. The table value of 't' at 5% level of significance for 8 degrees of freedom (Where $n=10$) is equal to 2.305. Since the computed value of t is less than the table value the null hypothesis (H_0) is accepted.

Limitation of the Study

The following are the limitation of the study:

1. The study covers only 10 years period i.e. 2003-2004 to 2012-2013 for the Working Capital analysis of CIL Ltd.
2. The secondary data's used in this study have been taken from published annual reports only.
3. As per the requirement and necessarily some data's have been grouped and sub-grouped.

V. Findings & Suggestions

- The Net working Capital of CIL during the period of study was satisfactory as it showed an increasing trend in its values. CIL must try to maintain this position in future also. CIL must try to keep regular check, whether its current liabilities are exceeding the gross working capital of the firm.
- Liquidity position of the firm was adequate because the average value of this Current Ratio was only 2.04 times which is well near the ideal ratio of 2:1 times. Which indicates that, it is in a position to meet its short term obligations with the existing current assets, but it is in the verge of break even either to come down or go up. So the firm must stabilize the position of its current assets to maintain a current ratio of at least the ideal value.
- The Liquid ratio of the firm was well above the ideal value amount of liquid assets during the period of study. The arithmetic mean of the liquid ratio was 1.97 times which is well below the ideal value of 1:1 times. So the firm must also stabilize the portion of the liquid assets to stabilize the short solvency position.
- The cash position ratio of the firm was also satisfactory as it was able to generate adequate amount of cash from its assets. The average value of the ratio was only 0.40 times. The firm must try to keep regular check on its assets to identify whether they are staying idle or obsolete. Only the liquid cash will help the firm to face any uncertainties at the times of depressions.
- Working capital turnover ratio of the firm was satisfactory as it was able to generate on an average 2.11 times the amount of working capital deployed. It should try to at least maintain this situation or to increase its sales turnover. It should try to greater more sales from its

existing assets.

- The profitability position of the firm was not satisfactory because its operating profitability position was 3.60% of its turnover, which is well below the risk free bank rate. The share holders will at least expect a return more than the normal bank rate. The capital employed in the firm was not appropriately used. It should try to increase the profitability position by reducing the direct and indirect operating expenses of the firm.
- Applying of student's t test between Current Ratio and ROCE showed that the calculated value of t was less than the table value of t. Hence the null hypothesis was accepted and alternate hypothesis was rejected. It says that there was no significant difference between liquidity and profitability of the firm during the period of research study.
- When student's t test was applied between ROCE and Risk showed that the calculated value of t was less than the table value of t. Hence the null hypothesis was accepted and alternate hypothesis was rejected. It says that there was significant difference between profitability and risk of the firm during the period of research study.

Since the amount and risk involved in capital investment decision are very high, the firms give little importance to the issues related with working capital. But from the above study we can say that CIL should give due consideration to its working capital management policies. The company must improve its present liquidity position to remain stable at the time of discrepancies or recession. It should also try to generate higher returns from its assets. The company must keep an optimum balance between liquidity and profitability for efficient use of its working capital. At the same time it should not stop formulating certain policies to keep a well-monitored working capital for better profitability, stability, reliability, growth and consistency.

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Annual reports of CIL Ltd (2003-2004 to 2012-13)

Table 1: Statement Showing Net Working Capital Position
(Rs. in Crores)

Year	Current Assets(Rs.)	Current Liabilities(Rs.)	Net Working Capital (Rs.)
2003-2004	9995.58	4226.38	5769.20
2004-2005	11247.51	4428.67	6818.84
2005-2006	17535.99	18047.74	6363.31
2006-2007	24411.05	21044.38	3366.67
2007-2008	13249.93	4775.93	8474.00
2008-2009	46448.55	39281.97	7166.58
2009-2010	54324.38	41431.65	12892.73
2010-2011	68318.26	26665.85	41652.41
2011-2012	87375.35	34188.4	53186.95
2012-2013	99692.20	37669.82	62022.38
Arithmetic Mean	43259.88	23176.08	20771.31
Avg Annual Growth Rate (%)	89.74	65.94	97.51
S.D (σ)	33233.51	14967.19	22403.07

Source : Annual reports of CIL (2003-2004 to 2012 to 2013)

Table 2: Statement Showing Current Ratio
(Rs. in Crores)

Year	Current Assets (Rs.)	Current Liabilities (Rs.)	Current Ratio (Times)
2003-2004	9995.58	4226.38	2.37
2004-2005	11247.51	4428.67	2.54
2005-2006	17535.99	18047.74	1.35
2006-2007	24411.05	21044.38	1.16
2007-2008	13249.93	4775.93	2.77
2008-2009	46448.55	39281.97	1.18
2009-2010	54324.38	41431.65	1.31
2010-2011	68318.26	26665.85	2.56
2011-2012	87375.35	34188.4	2.56
2012-2013	99692.2	37669.82	2.65
Arithmetic Mean	43259.88	23176.08	2.04
Avg Annual Growth Rate	89.74	65.94	0.99
S.D (σ)	33233.51	14967.19	0.69

Source: Annual reports of CIL (2003-2004 to 2012 to 2013)

Table 3: Statement of Liquid Assets to Current liabilities
(Rs. in Crores)

Year	Liquid Assets (Rs.)	C L (Rs.)	Liquid Ratio (Times)
2003-2004	9960.76	4226.38	2.36
2004-2005	11200.18	4428.67	2.53
2005-2006	17506.97	18047.74	1.35
2006-2007	24387.37	21044.38	1.16
2007-2008	13239.49	4775.93	2.77
2008-2009	42765.66	39281.97	1.09
2009-2010	49922.61	41431.65	1.20
2010-2011	62732.65	26665.85	2.35
2011-2012	81304.07	34188.4	2.38
2012-2013	94074.37	37669.82	2.50
A.M. (x)	40709.41	23176.08	1.97
Avg Annual Growth Rate	84.44	65.94	0.50
S.D (σ)	30633.16	14967.19	0.67

Source: Annual reports of CIL (2003-2004 to 2012-2013)

Table 4: Statement of Cash to Current Assets

(Rs. in Crores)

Year	Cash & Equivalents (Rs.)	TA(Rs.)	Cash position Ratio (Times)
2003-2004	5107.21	16447.85	0.31
2004-2005	7986.95	31875.65	0.25
2005-2006	13427.24	38655.71	0.35
2006-2007	3728.98	18985.23	0.20
2007-2008	4663.96	19656.06	0.24
2008-2009	29695.01	61821.26	0.48
2009-2010	39077.96	70814.75	0.55
2010-2011	45806.44	85864.60	0.53
2011-2012	58202.78	106946.60	0.54
2012-2013	62236	121564.80	0.51
A.M. (x)	26993.25	57263.25	0.40
Avg Annual Growth Rate	93.22	53.26	10.01
S.D (σ)	23063.83	38241.56	0.14

Source: Annual reports of CIL (2003-2004 to 2012-2013)

Table 5: Statements of Annual Sales to Working Capital

(Rs. in Crores)

Year	Avg Annual Sales (Rs.)	Working Capital (Rs.)	Working Capital Turnover ratio (Times)
2003-2004	124.51	5769.20	0.02
2004-2005	25862.86	6818.84	3.79
2005-2006	28701.83	6363.31	4.51
2006-2007	243.8	3366.67	0.07
2007-2008	235.46	8474.00	0.03
2008-2009	39123.48	7166.58	5.46
2009-2010	44615.25	12892.73	3.46
2010-2011	60240.9	41652.41	1.45
2011-2012	62415.43	53186.95	1.17
2012-2013	68302.74	62022.38	1.10
A.M. (x)	32986.63	20771.31	2.11
Avg Annual Growth Rate	5476.77	97.51	500.27
S.D (σ)	26505.18	22403.07	2.02

Source: Annual reports of CIL (2003-2004 to 2012-2013)

Table 6: Showing Profitability

(Rs. in Crores)

Year	Total Assets (TA) Rs.	Current Liabilities (CL) Rs.	Capital Employed (TA- CL) Rs.	Operating Profit (Rs.)	ROCE (%)
2003-2004	16447.85	4226.38	12221.47	1383.07	11.11
2004-2005	31875.65	4428.67	27446.98	4850.64	0.19
2005-2006	38655.71	18047.74	20607.97	8753.98	0.30
2006-2007	18985.23	21044.38	-2059.15	2885.77	11.84
2007-2008	19656.06	4775.93	14880.13	2606.04	11.07
2008-2009	61821.26	39281.97	22539.29	5867.45	0.15
2009-2010	70814.75	41431.65	29383.1	14038.06	0.31
2010-2011	85864.6	26665.85	59198.75	16584.34	0.28
2011-2012	106946.6	34188.4	72758.21	21235.49	0.34
2012-2013	121564.8	37669.82	83894.94	25017.35	0.37
A.M. (x)	57263.25	23176.08	34087.17	10322.22	3.60
Avg Annual Growth Rate	53.26	65.94	58.65	1.71	-9.67
S.D (σ)	38241.56	14967.19	28169.51	8400.13	5.35

Source: Annual reports of CIL (2003-2004 to 2012-2013)

Table 7: Statement for Calculation of Correlation

Year	Current Ratio	R1	ROCE	R2	D= (R1-R2)	D ²
2003-2004	2.37	5	11.11	9	-4	16
2004-2005	2.54	6	0.19	2	4	16
2005-2006	1.35	4	0.30	4	0	0
2006-2007	1.16	1	11.84	10	-9	81
2007-2008	2.77	10	11.07	8	2	4
2008-2009	1.18	2	0.15	1	1	1
2009-2010	1.31	3	0.31	5	-2	4
2010-2011	2.56	7	0.28	3	4	16
2011-2012	2.56	8	0.34	6	2	4
2012-2013	2.65	9	0.37	7	2	4
						146

Source: Annual reports of CIL (2003-2004 to 2012-2013)

Table 8: Statement Showing Risk

(Rs. in Crores)

Year	Equity+Reserve & Surplus (E) Rs	Long term Loans (L) Rs	Fixed Assets (FA) Rs	Current Assets (CA) Rs	Risk (R _k) %
2003-2004	9569.92	2524.3	133.99	9995.58	119.66
2004-2005	10584.42	2372.4	129.1	11247.51	114.05
2005-2006	14325.75	2318.99	11695.31	17535.99	28.22
2006-2007	11966.56	1646.1	115.35	24411.05	55.29
2007-2008	12423.42	1510.83	112.65	13249.93	104.31
2008-2009	19165.06	2148.48	11464.62	46448.55	21.20
2009-2010	25795.21	2086.85	12458.66	54324.38	28.39
2010-2011	33314.2	3391.15	12064.72	68318.26	36.07
2011-2012	40453.02	3980.31	12681.15	87375.35	36.34
2012-2013	48471.99	4215.00	16961.71	99692.20	35.84
A.M. (x)	22606.96	2619.44	7781.73	43259.88	57.94
Avg Annual Growth Rate	40.65	6.70	1255.89	89.74	-7.01
S.D (σ)	13840.94	933.07	6766.03	33233.51	38.95

Table 9: Statement for calculation of Correlation

Year	Risk (R _k)	R3	ROCE(%)	R4	D= (R3-R4)	D ²
2003-2004	119.66	10	11.11	9	1	1
2004-2005	114.05	9	0.19	2	7	49
2005-2006	28.22	2	0.30	4	-2	4
2006-2007	55.29	7	11.84	10	3	9
2007-2008	104.31	8	11.07	8	0	0
2008-2009	21.20	1	0.15	1	0	0
2009-2010	28.39	3	0.31	5	-2	4
2010-2011	36.07	4	0.28	3	1	1
2011-2012	36.34	5	0.34	6	-1	1
2012-2013	35.84	6	0.37	7	-1	1
						70

Source: Annual reports of CIL (2003-2004 to 2012-2013)