

# INTERNATIONAL JOURNAL OF RESEARCH IN COMPUTER APPLICATION & MANAGEMENT

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# CONTENTS

<b>Sr. No.</b>	<b>TITLE &amp; NAME OF THE AUTHOR (S)</b>	<b>Page No.</b>
1.	<b>A STUDY ON JOB PERFORMANCE OF MANAGERS IN PHARMACEUTICAL INDUSTRY IN HIMACHAL PRADESH</b> <i>ASHOK KUMAR BANSAL &amp; O. P. MONGA</i>	1
2.	<b>CRAWLING TWITTER DATA</b> <i>A. PAPPU RAJAN &amp; S. P. VICTOR</i>	7
3.	<b>TREND ANALYSIS OF MARUTI SUZUKI (2010-2013)</b> <i>G. SANTOSHI</i>	11
4.	<b>A SURVEY OF DISCRETE IMAGE TRANSFORM METHODS IN IMAGE DATA COMPRESSION</b> <i>DR. E. NAGANADHAN &amp; KALPANA. D</i>	22
5.	<b>USING RADIAL BASIS FUNCTION NETWORKS TO EXAMINE SEMIOTIC THEORIES OF ACCOUNTING ACCRUALS</b> <i>SOMAYEH NAEEMI &amp; GHODRATOLAH TALEBNIA</i>	27
6.	<b>CLOUD COMPUTING SYSTEM</b> <i>SUMIT BHATT</i>	32
7.	<b>'BANK ON WHEELS' FOR FINANCIAL INCLUSION: A CASE STUDY</b> <i>DIVYA PRABHU P</i>	36
8.	<b>IMPACT OF RETAIL BANKING ON CUSTOMER SATISFACTION IN DELHI</b> <i>KULDEEP SINGH</i>	41
9.	<b>AN EXPLORATORY STUDY ON ORGANISATIONAL CRISIS IN INFORMATION TECHNOLOGY INDUSTRY</b> <i>SHIVANI PANDEY &amp; DR. VINKY SHARMA</i>	46
10.	<b>EFFECT OF TRAINING IN TEACHING SKILLS ON THE CLASSROOM BEHAVIOUR OF PROSPECTIVE TEACHERS IN RELATION TO THEIR LEVEL OF ASPIRATIONS</b> <i>KUSUM LATA</i>	51
11.	<b>STUDY ON PROFITABILITY IN NEW GENERATION PRIVATE SECTOR BANK IN INDIA</b> <i>D. RAJAPRABU &amp; DR. V. DHEENADHAYALAN</i>	58
12.	<b>INTERFERENCE EVADING USING SYMBIOTIC CODES FOR HIGH DENSITY WIRELESS NETWORKS</b> <i>M.ANJALI &amp; R.SATHYA JANAKI</i>	66
13.	<b>SECURITY CONCERNS OF ONLINE USERS IN INDIA</b> <i>HARSHMEETA KAUR SONI</i>	72
14.	<b>CORPORATE GOVERNANCE: AN ANALYSIS OF LEGAL FRAMEWORK AND INDIAN GOVERNANCE SYSTEM</b> <i>NITIN KUMAR</i>	78
15.	<b>WORD TRANSLATION DISAMBIGUATION</b> <i>SHWETA VIKRAM</i>	82
16.	<b>DETERMINANTS OF CORPORATE CAPITAL STRUCTURE: WITH SPECIAL REFERENCE TO HOME APPLIANCES INDUSTRY IN INDIA</b> <i>ANKUR AGRAWAL &amp; Y. P. SINGH</i>	87
17.	<b>TASK DEMAND AS A FACTOR CAUSING JOB STRESS: A STUDY OF WORKING WOMEN OF IT SECTOR IN NATIONAL CAPITAL REGION OF DELHI</b> <i>MONICA AGARWAL, SANTHI NARAYANAN &amp; DR. DALEEP PARIMOO</i>	92
18.	<b>RURAL MARKETING</b> <i>MAMTA RANI</i>	98
19.	<b>A STUDY ON THE WORKING FUND RATIO OF THE DISTRICT CENTRAL COOPERATIVE BANKS IN TIRUNELVELI REGION, TAMILNADU</b> <i>DR. A. MAHENDRAN &amp; MOGES TADESSE</i>	103
20.	<b>THE ROLE OF SOCIAL ENTREPRENEURSHIP APPROACH IN ENCOURAGING GROWTH OF SUSTAINABLE ENTERPRISES</b> <i>JEPCHIRCHIR JUSTINA KORIR &amp; DR. GORRETTY A. OFAFA</i>	111
	<b>REQUEST FOR FEEDBACK &amp; DISCLAIMER</b>	117

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## A STUDY ON JOB PERFORMANCE OF MANAGERS IN PHARMACEUTICAL INDUSTRY IN HIMACHAL PRADESH

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### ABSTRACT

*This study was conducted with major objective to understand the impact of socio-demographic variables on job performance of the Managers working in pharmaceutical industry in Solan and Sirmour districts of Himachal Pradesh. The sample for the present study comprised of 281 respondents. The empirical information about socio-demographic characteristics of the respondents was collected by interviewing respondents with the help of questionnaire developed for this purpose. The job performance of the managers was measured by administering, 'The Job Performance Questionnaire' by Bharti Gandhi (2002). On the basis of statistical findings, it was found that the job performance of the managers vary across various sub categories of socio-demographic variables, such as, age, gender, education, marital status, work experience, and department. But the results were found not statistically significant. The chi-square test also did not show any significant association between socio-demographic variables and job performance.*

### KEYWORDS

Job Performance, Pharmaceutical Industry, Managers, and Association.

### INTRODUCTION

In present scenario, where the world of job is changing rapidly due to liberalization, privatization, and globalization, there are numerous changes in the field of technology, culture, values, diversity in work force, diversity in processes and the product produced, etc., even competition in the market place is also affected by it. Thus increased competition has resulted into need for sharpening organizational efficiency for their survival. So it is clear that whether the matter of success of an organization or of individual success, the performance or productivity of employees plays a major role. In this context it may be said that it is important for any organization to have more productive manpower for its success and survival in present era. Equally, it's also fruitful for attainment of individual's goals. The performance of employees is a very complex phenomenon from past decades. Generally performance means outcome achieved or accomplishments at work and the actual contribution of an individual or team to the organizations strategic goals, like stakeholder satisfaction, clean image, and economic sustainability etc. Vitles (1953) used the terms like "capacity to work" and "will to work" and had proposed that both determine the levels of performance. Vroom (1964) has explained that job performance is a result of ability multiplied by motivation. He further stated that job performance is the beginning of everything in organization in terms of the performance of human resources. Organizations function successfully only when the people occupying each structural position perform their role in a coordinated manner.

Job performance is commonly regarded as one of the most central construct within the field of organizational behavior. A substantial body of research has attempted to identify the factors that are responsible for individual differences in job performance. A number of scholars have worked on the job performance of employees. For instance some are; Brady (2001), Myaskovsky et al. (2005), Smita Chattopadhyay and Gupta (2005). These researchers made efforts to explore this aspect of job in the context of factors, such as, age, gender, education, experience and marital status. In addition to this there are half a dozen of more scholars who also investigated this phenomenon. Jurgen et al. (2008) investigated the influences of age and gender compositions on group performance and self-reported health disorders. Age diversity and gender composition was positively correlated with health disorders, and on routine decision-making tasks. Female employees performed worse and reported more health disorders than gender diverse teams. Thomas and Daniel (2008) provided an expanded meta-analysis on the association between age and job performance. Results showed that although age was largely unrelated to core task performance, creativity and performance in training programs. Ahmed et al. (2012) investigated factors affecting the performance of professional teachers at higher educational level in Khyber Pakhtunkhwa. This study was conducted on 400 respondents. In this study researchers found that personal characteristics (age, gender, education and marital status) of the respondents significantly associated with job performance. Chilya (2012) conducted a study to measure the impact of level of education and experience of profitability of small grocery shops in South Africa. The findings of the study revealed that previous work experiences, education levels, age of the owner and the length of business operation significantly impacted on the profitability of the business. Savitri Sharma (2012) conducted a study on job performance and reported that: 1) Correlation between role performance and age, gender, experience, marital status are insignificant; 2) Researcher is also of opinion that the College Principals possessing doctorate degree perform their role in a better way as compared to their post-graduate counterparts. But the findings of these studies being contradictory, it is still not clear that what factors which determine the job performance the most?

Statement of Problem: In the present era there is a healthy competition in the market. In this phase to survive in the market place it is important to have productive hands. As it is noticed that the youth of present is very much career conscious, they want to attain their goal by at any ends. So in this phase to retain the skilled and higher performer employees is a very crucial issue in this corporate world. Because in present time, on one hand, jobs demand knowledge, skills, and good performance; and, on the other hand employees aspirations also change with the passage of time. So the present employee has also become more demanding, because of increased professionalism. In this context, it can be said that job performance is very important for the individual and as well as an organizational concern. Since the success and growth of any organization largely depends on performance of employees, therefore, it continues to be an area of continued interest for the researchers in the field of organizational behavior.

In this backdrop the present study i.e. 'A study on Job performance of Managers in Pharmaceutical Industry in Himachal Pradesh' was conducted.

### OBJECTIVES

The main objective of this study was to find out the impact of socio-demographic variables, such as, age, gender, education, marital status, work experience and department on the job performance.

In this study following hypotheses were framed and tested.

H<sub>0</sub>1: There is no association between age and job performance.

H<sub>0</sub>2: Association between job performance and gender is not significant.  
H<sub>0</sub>3: Relationship between education and job performance is not significant.  
H<sub>0</sub>4: There is no significant relationship between marital status and job performance.  
H<sub>0</sub>5: Association of experience with job performance is not significant.  
H<sub>0</sub>6: Impact of department on job performance is not significant.

## REVIEWS RELATED TO JOB PERFORMANCE

Brief account of these studies is presented here.

**Brady (2001)** examined the job performance of Principals in California. Researcher reported that the length of years in current position relates to Principals perceived job performance and overall job satisfaction. Brady theorized that Principals who stayed in their current position the longest most likely stayed due to high job satisfaction and perceived job performance.

**Myaskovsky et al. (2005)** examined the separate and combined impact of gender composition and training method on both the performance and interpersonal behaviors exhibited in small work groups. Results indicated that groups whose members were trained together took longer to assemble their radio and made more errors than those trained apart. No performance differences were found between the mixed gender and the same gender groups.

**Roos (2005)** studied the relationship between employee motivation, job satisfaction and corporate culture. The scholar found that demographic variables namely, age, gender, tenure, education level and seniority of employees showed influence on employee motivation, job satisfaction and corporate culture.

**Smita Chattopadhyay and Gupta (2005)** conducted a study on the impact of life stages and career stages on employee job performance. Scholars are of opinion that there is a significant impact of life stages (age) as well as career stages of employees on their performance.

## RESEARCH METHODOLOGY

The present study was carried out in the state of Himachal Pradesh. All employees working in pharmaceutical industries in Himachal Pradesh comprised the study population.

There are 362 pharmaceutical companies spread over 7 districts viz Solan, Sirmour, Kangra, Una, Bilaspur, Mandi, and Shimla. There companies are of large, medium and small pharmaceutical. However Solan district tops among seven districts in having highest (262) pharmaceutical companies followed by Sirmour District which has 64 such companies. Remaining five districts have companies ranging from 3-12. For the purpose of this study, two districts i.e. Solan and Sirmour were considered as the concentration of pharmaceutical industries is high in these districts. As these companies are not only small, medium and large but also vary in terms of their turnover, infrastructure, and size of human resource. Hence, for this study, to reduce variance and to have almost homogenous group, top 15 pharmaceutical companies, namely, Ranbaxy Laboratories, Cipla, Torrent Pharmaceuticals, Dr Reddy's Laboratories, Panacea Biotec, Gopal Lifesciences, Morepen Mankind Pharmaceuticals, Fem Care Pharma Limited, Indo co Remedies, Promed, Alkem, Ozone Ayurvedics, Abyss Pharma Private Limited, Dabur, Zydus Cadila were selected.

The information about number of managers working in these companies was obtained through telephonic enquiry from the establishment office of each company. As per this information, there were three hundred and eighty three managers working in these companies. All the 383 managers belonging to 15 companies were included in the sample. All the 383 managers working in fifteen companies were included in the sample. The unit of study was the manager.

The primary data pertaining to general background of the respondents was collected through interviews, whereas, the job performance was assessed by administering Job Performance Questionnaire, Bharti Gandhi (2002). This instrument is highly reliable as its reliability has been tested at alpha co-efficient of 0.75 levels and 0.96 levels. It has been earlier used by a number of scholars, namely, Nisha Kumari (2008), Anita Sharma et al, (2010).

However, out of 383 managers, complete information was available from 281 managers. have co-operated and participated in the study. Some others either refused to cooperate or were absent on the day of study. Finally, the analysis of information gathered from 281 managers was done using SPSS and by employing percentage, mean, standard deviation, and Chi-square in this study.

## OBSERVATIONS

The data on socio-demographic attributes of the 281 managers in the table below reveals that about half of them were in their middle age; there is preponderance of males (74%); postgraduates outnumber (63.3%) others i.e. graduates and diploma holders; a little over one third of them had less than five years of experience in the world of work; about 65 per cent were married and highest i.e. 27 per cent were employed in production department followed by Human Resource Department (17%).

TABLE NO. 4.1: SOCIO-DEMOGRAPHIC DISTRIBUTION OF RESPONDENTS

Age	Frequency	Percentage
<25	76	27.0
25-30	68	24.2
>30	137	48.8
<b>Total</b>	<b>281</b>	<b>100</b>
Gender	Frequency	Percentage
Male	208	74.0
Female	73	26.0
<b>Total</b>	<b>281</b>	<b>100</b>
Education	Frequency	Percentage
Diploma holders	8	2.8
Graduate	95	33.8
Post Graduate	178	63.3
<b>Total</b>	<b>281</b>	<b>100</b>
Experience	Frequency	Percentage
< 5	110	42.3
5-10	60	21.4
> 10	102	36.3
<b>Total</b>	<b>281</b>	<b>100</b>
Marital Status	Frequency	Percentage
Married	185	65.8
Unmarried	96	34.2
<b>Total</b>	<b>281</b>	<b>100</b>
Category	Frequency	Percent
HR	49	17.4
Finance	48	17.1
Production	77	27.4
Sale & Purchase	29	10.3
Marketing	35	12.5
I.T	43	15.3
<b>Total</b>	<b>281</b>	<b>100</b>



**SOCIO-DEMOGRAPHIC VARIABLES AND JOB SATISFACTION**

The relationship of socio-demographic variables, namely, age, gender, education, work experience, marital status and department with the job performance of the 281 managers is described below;

**AGE AND JOB PERFORMANCE**

Generally, it is assumed that age affects the individual's job performance; job satisfaction, motivation etc. If an insight gets into the career stages then it appears that in the early phase of his or her career, individuals are usually full of enthusiasm and energy to perform well and to explore his or her growth opportunities. But in the middle of his or her career individual is not as energetic as earlier phase of career due to some factors like job security, higher aspirations etc. and as individual moves forward in his or her career, experience increases and performance chart may goes up. Here, in the present study efforts were made to measure the association of age and job performance of managers. The following table outlines the age wise analysis of job performance.

**TABLE NO. 4.4.1: AGE OF RESPONDENTS AND JOB PERFORMANCE**

Job Performance	Age (in years)			Total Score
	>25	25-30	<30	
High Performer	49	33	74	156
	64.47%	48.52%	54.01%	55.5%
Moderate Performer	11	15	38	64
	14.47%	22.05%	27.73%	22.8%
Low Performer	16	20	25	61
	21.05%	29.41%	18.24%	21.7%
Total	76	68	137	281
	100%	100%	100%	100%

$df=4$ ,  $\chi^2 = 8.177$ ,  $P > 0.05$ , NS

There were 281 total respondents for the present study purpose. From the total respondents, it is revealed that higher percentage of the people were of higher performers (55.5 %), followed by the moderate performers (22.8%) whereas only 21.7% respondents were the low performers. It is clear from above table that there is no significant difference between the job performance across the three age groups. It was observed that across three categories of working experience, in age group 25 or less, majority (64.47%) were higher performers followed by 54.01% managers who were 30 years or more old, whereas, the age group of 25-30 showed the lowest percentage i.e. 48.52%. The proportion of moderate performer ranged between 14 to 28% across all age groups. The low performer respondents accounted only 10-17 percent.

Since, the calculated value of  $\chi^2 = 8.177$  is less than the table value 9.487 at 0.05 significance; it indicates that age is not associated with job performance of managers. This finding further point out that the null hypothesis i.e. there is no association between age and job performance is accepted. This finding is similar to the finding of the study conducted by Thomas and Daniel (2008). On the other hand this finding is contrary to the studies conducted by the researchers namely, Sumita Chattopadhyay and Gupta, Ajay (2005), Jurgan et al. (2008), Kaushal S.L. and Yashmin Janjhua (2011), Masqsood Ahmed et al. (2012). The mentioned researchers have found that age is significantly related with job performance of employees.

**GENDER AND JOB PERFORMANCE**

Gender factor may have an impact on the individual's job performance or it may be neutral which have no impact on the individual's job performance. To some extent gender factor also affects the job performance in terms of night shifts, long working hours, manual work, decision making, field work etc. It is also seemed that there are some particular tasks in industry where men labor is more preferable. In the present study the efforts were made to examine individual's job performance in the context of their gender. The table 4.4.2 demonstrates the data in account of job performance as per gender.

**TABLE NO. 4.4.2: GENDER OF RESPONDENTS AND JOB PERFORMANCE**

Job Performance	Gender		Total Score
	Male	Female	
High Performer	113	43	156
	54.32%	58.90%	55.5%
Moderate Performer	52	12	64
	25%	16.43%	22.8%
Low Performer	43	18	61
	20.67%	24.65%	21.7%
Total	208	73	281
	100%	100%	100%

$df=2$ ,  $\chi^2 = 2.338$ ,  $P > 0.05$ , NS

It is revealed from the above table that maximum people i.e. 55.5 % of the total population i.e. 281 is higher performer, whereas percentage of moderate and low performers is very less i.e. 22.8% and 21.7%, respectively. It is interesting to note that across sub-categories of gender i.e. males and females; a very little difference was perceived in percentages under higher, moderate and poor performer's categories. This variation is not significant as the difference is less than 10. It reveals that male and female managers working in pharmaceutical industry in Himachal Pradesh vary in their proportions but this variance in their level of job satisfaction is not significant. It is also supported by the 'Goodness of Fit' test as calculated value of  $\chi^2 = 2.338$  is less than the table value 5.99147 at 0.05 significance level it reports that gender is not significantly associated with the job performance. Hence, the null hypothesis i.e. there is no significant association between gender and job performance is accepted. This finding is supported by the study conducted by Myaskousky et al. (2005). The researcher found that no performance differences between the mixed and the same gender groups. However, finding of the preset study is contrary to the studies conducted by Jurgan et al. (2008), Ahmed et al. (2012), Chhiliya (2012), who reported that gender has significant relationship with performance of employees. They pointed out that males have better job performance than the females.

**EDUCATION AND JOB PERFORMANCE**

As it is already stated in the introduction of table 4.2.3 that how education is related or what role it play in individuals life. Education may have some impacts on job performance of individuals also. Due to education a person accumulates knowledge, acquire skills and some changes may be seen in his/her attitude. All these factors may play a vital role in work performance of individuals. Here in the present study, efforts were intended to measure the association of job performance with education. The following table outlines data in relation to the education and job performance.

TABLE NO. 4.4.3: EDUCATION OF RESPONDENTS AND JOB PERFORMANCE

Job Performance	Education			Total Score
	Diploma Holders	Graduate	Post Graduate	
High Performer	4	52	100	156
	50%	54.73%	56.17%	55.5%
Moderate Performer	0	28	36	64
	.0%	29.47%	20.22%	22.8%
Low Performer	4	15	42	61
	50%	15.78%	23.59%	21.7%
Total	8	95	178	281
	100%	100%	100%	100%

$df=4$ ,  $\chi^2=9.045$ ,  $P > 0.05$ , NS

Out of 281 respondents, higher percentage i.e. 55.5 was of higher performers. Only 21.7% of total population showed the poor performance. It is revealed from the above table that there is no significant difference in percentage across the all categories of education in respect to higher performance and same it happens in case of moderate performance. The variation across higher and moderate performer is not significant as the difference is less than 10 percent. Whereas in case of poor performance diploma holders showed the higher percentage i.e. 50 followed by post graduates (23.59%) whereas graduates has returned lower percentage (15.78) in the poor performer's category.

Since, the calculated value of  $\chi^2=9.045$  is less than the table value of  $\chi^2$  at 0.05 significance level i.e. 9.48773, the null hypothesis i.e. education is not significantly associated with job performance, is accepted. This finding of the present study goes with the result of the study conducted by Posner (1992). The researcher reported that performance of employees is not moderated by the education.

#### EXPERIENCE AND JOB PERFORMANCE

Experience also plays an important role in individual's job performance but it may be true in one situation or it may be not in other. Through exposure to work a person learns about the work culture, behavior patterns required at work place, duties and responsibilities, discipline, punctuality, new outlook of life etc., in the context of his/her job. Hence, it may be possible that tenure of services also affect the job performance of employees. In the present study efforts were directed to find out that whether job performance of individual's is affected by their tenure of services or not. In table 4.4.4 data illustrate job performance as per individuals work experience;

TABLE NO. 4.4.4: WORK EXPERIENCE OF RESPONDENTS AND JOB PERFORMANCE

Job Performance	Experience (in years)			Total Score
	>5	5-10	<10	
High Performer	71	33	52	156
	59.66%	55%	50.98%	55.5%
Moderate Performer	20	13	31	64
	16.80%	21.66%	30.39%	22.8%
Low Performer	28	14	19	61
	23.52%	23.33%	18.62%	21.7%
Total	119	60	102	281
	100%	100%	100%	100%

$df=4$ ,  $\chi^2=5.942$ ,  $P > 0.05$ , NS

Out of 281 respondents, it was found that higher percentage i.e. 55.5 is of higher performers and only 21.7% respondents of whole population showed the poor performance. The percentage of high performers was highest (59.66%) in respondents with less than 5 years of experience and the lowest (50.98%) in with more than 10 years of experience. It is interesting to observe that there is very little difference noted across all categories of work experience. The variation among all values is less than 10. It is also supported by the 'Goodness of Fit' test as the calculated value of  $\chi^2=5.942$  is less than the table value of  $\chi^2$  at 0.05 significance level i.e. 9.487. Thus null hypothesis, 'there is no association between work experience and job performance' is accepted and it is reported that the duration of work experience is not significantly associated with the job performance. This finding of the study is in line with the studies conducted by Posner (1992).

#### MARITAL STATUS AND JOB PERFORMANCE

Marital status also plays an active role in individual's job performance. Because of this factor responsibility, recognition, and social status also increase. After marriage, a person learns to discharge domestic and family responsibilities and thereby develops more maturity which may lead to his or her better performance at work place. The following table shows the marital status wise analysis of job performance;

TABLE NO. 4.4.5: MARITAL STATUS OF RESPONDENTS AND JOB PERFORMANCE

Job Performance	Marital Status		Total Score
	Married	Unmarried	
High Performer	97	59	156
	52.43%	61.45%	55.5%
Moderate Performer	47	17	64
	25.40%	17.70%	22.8%
Low Performer	41	20	61
	22.16%	20.83%	21.7%
Total	185	96	281
	100%	100%	100%

$df=2$ ,  $\chi^2=2.623$ ,  $P > 0.05$ , NS

The above table 4.4.5 represents data regarding the association of marital status with job performance. It is revealed that higher percentage i.e. 55.5 % of the total population (281) was of higher performers followed by moderate performers (22.8%) whereas only 21.7% of respondents showed the poor performance. It is observed through the table that the variation among the figures is not significant because i.e. >10 across the all sub categories of performance which means the persons employed in pharmaceutical industry do not differ in performance as per their marital status. It is also proved by the application of Chi-square test. Since, the calculated value of  $\chi^2=2.623$  is less than the table value 5.991 at 0.05 significance level, the null hypothesis, 'there is no association between marital status and job performance' is accepted. Hence it may be summarized that marital status has no significant association with job performance of managers working in pharmaceutical industry in Himachal Pradesh.

#### DEPARTMENT AND JOB PERFORMANCE

In general it appears that the performance of person varies from individual to individual and department to department. There are different departments, such as, Human Resource, Finance, Production, Sales and Purchase, Marketing, and Information and Technology in pharmaceutical industry which differs in nature of work and the work force. Therefore, an attempt was made to assess the influence of this factor on job performance of managers. The following table information about the association of department with job performance;

TABLE NO.4.4.6: DEPARTMENT OF RESPONDENTS AND JOB PERFORMANCE

Job Performance	Department						Total Score
	HR	FINANCE	PROD.	S&P	MKT.	I.T	
High Performer	25	30	42	19	16	24	156
	51.02%	62.5%	54.54%	65.51%	45.71%	55.81%	55.5
Moderate Performer	9	13	17	6	12	7	64
	18.36%	27.08%	22.07%	20.68%	34.28%	16.27%	22.8
Low Performer	15	5	18	4	7	12	61
	30.61%	10.41%	23.37%	13.79%	20%	27.90%	21.7
Total	49	48	77	29	35	43	281
	100%	100%	100%	100%	100%	100%	100%

$df=10$ ,  $\chi^2 = 11.808$ ,  $P > 0.05$ , NS

Out of 281 respondents, 55.5 % of the total population comes under the higher performer category which is followed by the moderate performers (22.8%) whereas only 21.7 % of respondents returned poor performance.

Among the six departments, in sales and purchase department the percentage of highly satisfied respondents was the highest (65.51%), closely followed by the finance department. The marketing department was least represented (45.71%). Among the moderate performers, marketing department hold the maximum percentage (34.28) followed by finance department (27.08%) whereas information and technology department showed least percentage (16.27).

Among the poor performers category, Human Resource department has shown the higher percentage (30.61) whereas finance department outline the least percentage (10.41).

Since, the calculated value of  $\chi^2 = 11.808$  is less than the table value 18.307 at 0.05 significance level, the null hypothesis i.e. there is no significant association between department and job performance is accepted. In the literature reviewed it was found that hardly any researcher considered department as the factor of job performance. Hence, finding of the present study requires some more studies in this area for authentication.

In sum, it emerges from the above statistical findings of empirical data that socio-demographic variables, such as, age, gender, education, work experience, marital status, and department did not show statistically significant association with job performance. Hence, that 'No association exists between socio-demographic variables and job performance', holds true.

## DISCUSSION

The main findings of this study are recapitulated here for possible explanation and discussion. First, there is no statistically significant association between age and job performance. There are some researchers, namely, Thomas and Daniel (2008) who also did some work on the same field and reported that there is no significant connection between age and job performance. In spite of these finding, Sumita Chattopadhyay and Gupta, Ajay (2005), Jurgan et al. (2008), Kaushal S.L. and Yashmin Janjhua (2011), Masqsood Ahmed et al. (2012) reported significant relationship between job performance of employees and their age. The age range of the respondents included in this study was 25 to 35 years. This age range technically constitutes an adult group. Since the adults have almost similar orientation towards life, and hence they presented no significant variation in terms of job performance. Second reason may be that in present time people are well skilled and they have so many aspirations from their job, and to achieve these it is must to show the high performance. In present time everyone wants to grow in his or her particular field, in this trend everyone wants to achieve his or her targets whether he or she is old or young.

The gender was not found to have any statistical significant influence on job performance of the respondents. This finding goes with the finding of the study conducted by Myaskousky et al. (2005). There are some other researchers who investigated that there is significant influence of gender factor on job performance of employees namely, Jurgan et al. (2008), Masqsood Ahmed et al. (2012), and Norman Chilya (2012). No association between gender and job performance in this study may be accounted to that the females in present time are more career conscious, and they want to become more self dependent and hence assert to perform equal to their male counterparts. Earlier in the Indian culture females were more concerned with domestic affairs only but due to some changes like education, awareness and reservation etc. for the women increased their participation in all tasks. As a result they give fair competition to males.

The association of education with job performance is not statistically significant. Same results are also found in the study conducted by Posner (1992). Researchers namely, Masqsood Ahmed et al. (2012), Norman Chilya (2012) have the inverse result to the present finding of the study. There was three sub categories of education included in the study namely, diploma holders, graduates, and post graduates. After analysis of data it is observed that majority of the people (i.e. around 97%) hired for the managerial posts in industry are highly qualified (i.e. graduates and post graduates). Since there is a one class of respondents i.e. managerial, so that no significant influence of education is noticed. If the study is oriented to compare the performance of two working class people then it may be possible that some influence of education appears.

It seems after analysis of data that there is no statistically significant association exist between job performance and work experience of individuals. The same opinion found in the study of Posner (1992). Hence, there are some researchers namely, Brady (2001), Smita Chattopadhyay and Gupta, Amit (2005), Norman Chilya (2012) who found that there is an influence of experience on job performance. Today's youngster may has less exposure to the work as compare to the person having more experience of services but this generation may has zeal to prove their self and also to learn to new things, these things overcome their weakness of less work experience. That's why they report insignificant difference among their job performance.

Marital status has not shown any statistical significant influence on job performance. This finding of the study is contrary to the results of the studies conducted by Kaushal S. L. and Yasmin Janjhua (2011), Masqsood Ahmed et al. (2012). Generally it may assumed that the married person become more mature and responsible than unmarried. But in the real life situations may make a person more mature and responsible. So sometime it does not matter whether person is married or not, in respect to become mature and responsible. Due to the large amount of unemployment in India people become more career oriented even from their schooling, they opt only those courses for training which leads them towards their goals of career.

No statistically significant differences reveal in the job performance of managers as per different department. It may be found due to one thing that the people hired by employer are skilled, well educated, and trained in their respective field. Hardly any researcher considered department as the factor of job performance.

Hence, there is need to explore this area of research on wider scale to authenticate findings of this study.

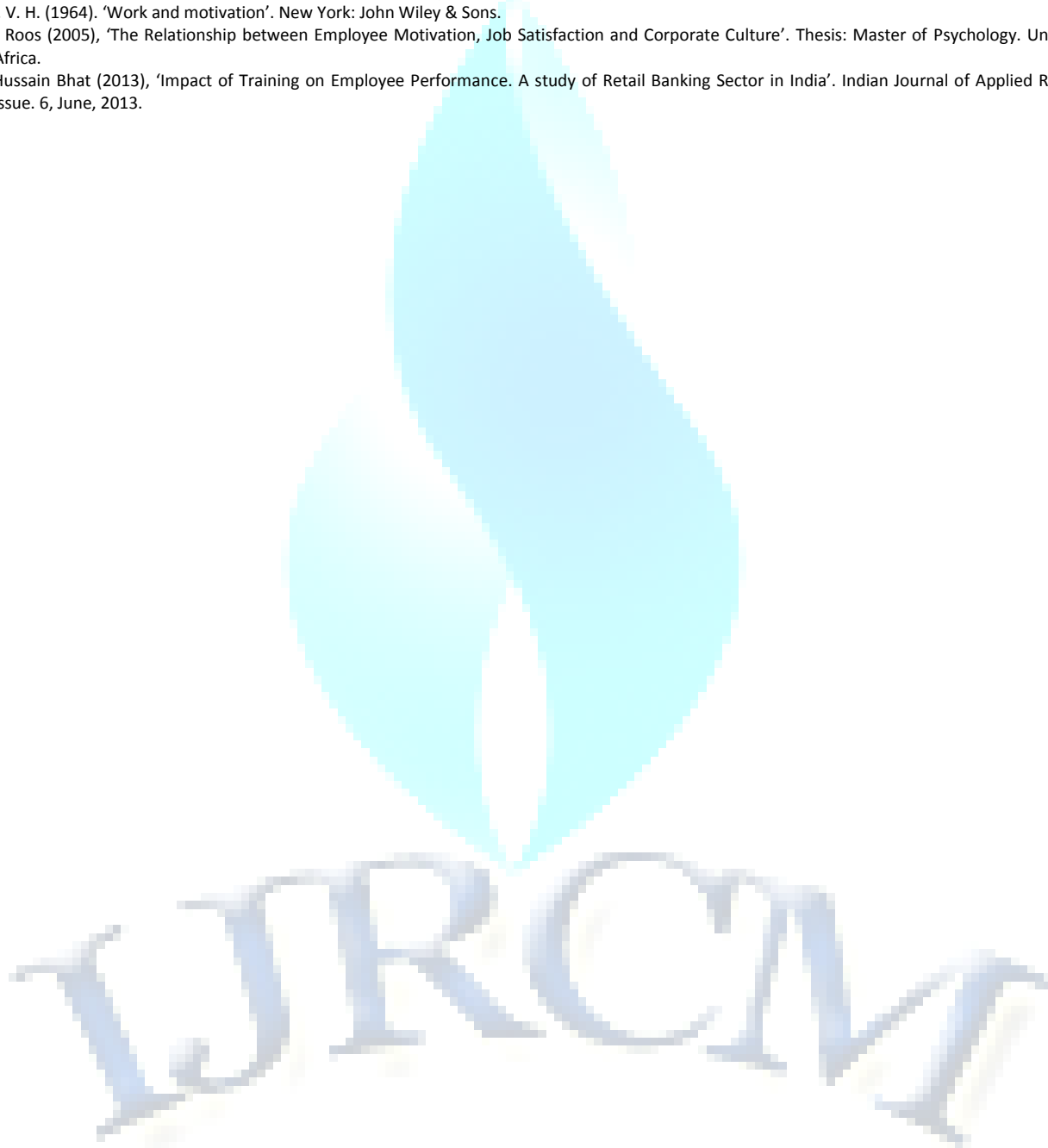
## CONCLUSION

On the basis of foregoing discussion on the major finding of this study, it may be reported that the socio-demographic variables, namely, age, gender, education, work experience, marital status and department have no association with job performance of managers in Pharmaceutical industry in Himachal Pradesh.

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## CRAWLING TWITTER DATA

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## ABSTRACT

The aim of this paper is to present an outline for how extracting data from twitter. The explosion of Web 2.0 and due to the large volume of data from web resources such as discussion forum, review sites, blogs, digital forum and social media. A substantial amount of research has been directed towards mining these texts and concludes on the overall meaning of the users and to assign a grade to the result under discussion. Mine this available huge data to make it proper use and presentable, giving right solution to a particular problem is a big real challenge. After getting the result from twitter, the data can be analyzed and predict future trend or taking efficient decision on the particular problem. In this paper deals with an introductory idea about the Twitter, TWITTER API, Streaming API, Open Authorization (OAuth) Workflow, Register OAuth credentials to twitter R session.

## KEYWORDS

Twitter Data, Extracting data from Twitter, Twitter API.

## INTRODUCTION

In an era of technology with increasing number of smart gadgets and decreasing cost of internet service has led people to interact in virtual worlds, universally known as social networking sites. Sites like Facebook, Twitter, LinkedIn, Hi5, Myspace, etc., has made use of internet as a communication point which surpassed the traditional communication platform of real world. The ease of sharing information in various fields like education, social issues, job related issues and entertainment had made it still more popular. Seventy five per cent of internet users in India are in the age group of 15-34. Adding to it the young population all over the world see it as a newest online trend to express all their feelings, emotions, humiliations, sadness, and joy in the form of posts, tweets, status, videos, pictures etc., without considering the aftermath of their actions.

The objective of this paper is to throw lime light on how can we extract or crawl data from Twitter. This paper also concludes with the set of guidelines for social networking users to crawl data from Twitter, the crawled data can be used for further research on opinion mining or sentiment analysis

Twitter was created in March 2006 and was officially launched in July 2006. The growth of Twitter has been phenomenal, currently having reached over 200 million users all over the world and handling over 200 million tweets per day. Users sign up for an account on Twitter, and once they have an account they can begin to "TWEET," which is the terminology for sending a message. Users can subscribe to other user's tweets, a process known as FOLLOWING. These subscribers are known as "FOLLOWERS." By default, tweets that a user sends are visible to everyone, however, users can also choose to send tweets specifically to their followers that will not be visible to the public.

Users on Twitter are identified by a user name, and this user name is preceded by the "@" symbol. When a user identifies another user in their tweet by their user name, it will be visible to the public, and the user that is referenced will be notified by Twitter that they have been "mentioned." [1]

If a user sees a tweet that is interesting and wants to pass the information along, they can "RETWEET" the post, which is similar to forwarding an email message to their followers. Retweets will generally be identified with an "RT" that is embedded in the message.

Lastly, messages can be grouped by topic or type by the use of HASHTAGS (#). A hashtag preceding the topic will allow Twitter users to find tweets related to a particular topic when performing a search. Twitter also has a location function. If users are tweeting from a mobile device, they can choose to turn on their location, and their latitude and longitude will be captured with the tweet.

Tweets can be related to anything, but much of the content on Twitter is related to several key categories. These categories were outlined in research done by Pear Analytics in 2009 on 2,000 tweets [2]. This study found that tweets were primarily related to six categories:

1. Pointless babble – 40%
2. Conversational – 38%
3. Pass along value – 9%
4. Self-promotion – 6%
5. Spam – 4%
6. News – 4%

While these numbers are related to a study that was done two years ago when Twitter was not as widely used as it is now, the general categorization of tweets likely still holds. The areas of interest would be categories 2, 3, and 6, which account for 51% of tweets. So the challenge is to determine how to analyze the tweets in such a way that the important information is separated from the information that is not important.

The data that was captured from Twitter includes the following information:

TABLE 1.0: TWITTER INFORMATION

Caption	Purpose / Explanation
User	The username that sent the tweet
Tweet	The content of the tweet
Timestamp	The date and time the tweet was sent
Tweet ID	Twitter identification number of the tweet
Geo	Latitude and longitude of the user



## EXTRACTING TWITTER DATA

Users on Twitter generate over millions of million Tweets each and every day. Some of these Tweets are available to researchers and practitioners through public APIs at no cost. At present Twitter accessibility user needs to pay some amount. But majority of the user don't know about how to access twitter data also why we needed this type of social media data. Whether it is useful to some extent of their human life. Yes, all the business functional system was discussed over twitter also this is one of the trendsetter of any event. All the internet users are using this data for their business decision. Later in this paper we discuss about this matter very deeply. Now we will see how to extract the following types of information from Twitter. Usually these are the information can be extracting: Information about a user, Tweets published by a user, Search results on Twitter.

## TWITTER API

In general an application programming interface (API) specifies how some software components should interact with each other. The most procedural languages, an API specifies a set of functions or routines that accomplish a specific task or are allowed to interact with a specific software component. Twitter API data can be classified into two types based on their design and access method: REST APIs are based on the REST architecture now popularly used for designing web APIs. REST APIs are having the following resources: Time lines, tweets search, streaming, direct message, friends and followers, users, suggested users, favorites, lists, saved searchers, place and Geo, trends, spam reports, OAuth, help. These APIs use the pull strategy for data retrieval. To collect information a user must explicitly request it. Streaming APIs provides a continuous stream of public information from Twitter. These APIs use the push strategy for data retrieval. Once a request for information is made, the Streaming APIs provide a continuous stream of updates with no further input from the user. They have different capabilities and limitations with respect to what and how much information can be retrieved. The Streaming API has three types of endpoints: Public streams, User streams, Site streams. Public streams are streams containing the public tweets on Twitter. User streams are single-user streams, with to all the Tweets of a user. Site streams are multi-user streams and intended for applications which access

Tweets from multiple users. As the Public streams API is the most versatile Streaming API, we will use it in all the examples pertaining to Streaming API. There are four layers in the streaming API. [7]

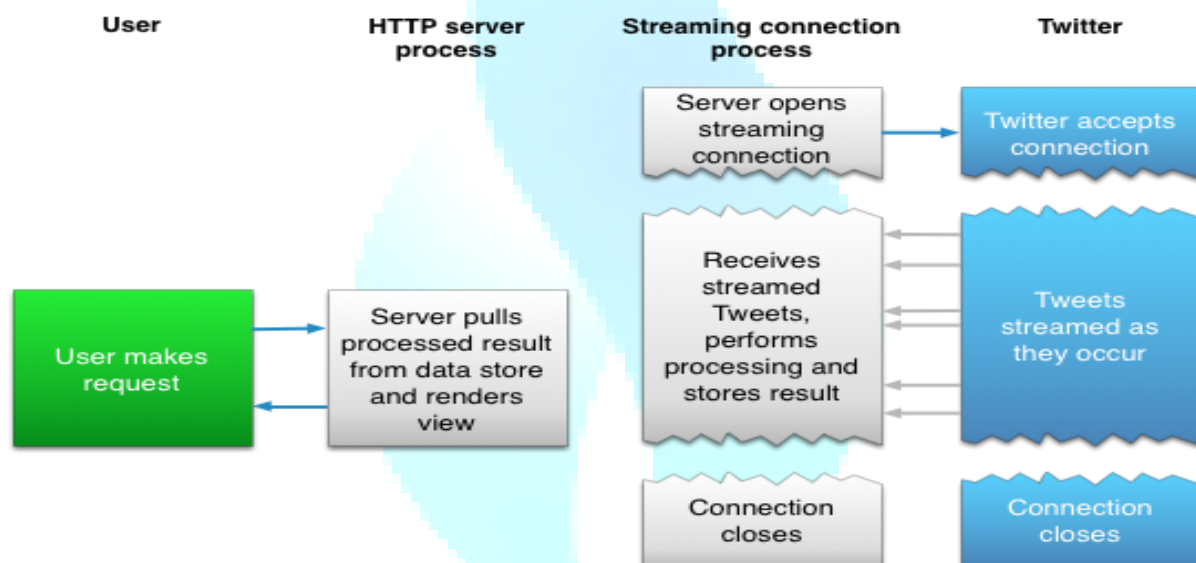
Layer 1: User

Layer 2: HTTP Process

Layer 3: Streaming connection process

Layer 4: Twitter data

FIGURE : 1.0: STREAMING API



A web application is a type 3 tier layer. Here Layer 1 is a user layer which can sending request and getting response. Layer 2 HTTP Process layer which makes regular process of the Middle layer of the Web system but user requests, makes one or more requests to Twitter's API, then formats and prints the result to the user, as a response to the user's initial request: An app which connects to the Streaming APIs will not be able to establish a connection in response to a user request, as shown in the above example. Instead, the code for maintaining the Streaming connection is typically run in a process separate from the process which handles HTTP requests: The streaming process gets the input Tweets and performs any parsing, filtering, and/or aggregation needed before storing the result to a data store. The HTTP handling process queries the data store for results in response to user requests. While this model is more complex than the first example, the benefits from having a real time stream of Tweet data make the integration worthwhile for many types of apps.

The aforementioned types of information can be collected using both forms of Twitter API. Requests to the APIs contain parameters which can include hash tags, keywords, geographic regions, and Twitter user IDs. Responses from Twitter APIs are in JavaScript Object Notation (JSON) format. JSON is a popular format that is widely used as an object notation on the web. JSON (JavaScript Object Notation) is a lightweight data-interchange format. It is easy for humans to read and write. It is easy for machines to parse and generate. It is based on a subset of the JavaScript Programming Language, Standard ECMA-262 3rd Edition - December 1999. JSON is a text format that is completely language independent but uses conventions that are familiar to programmers of the C-family of languages, including C, C++, C#, Java, JavaScript, Perl, Python, and many others. JSON is built on two structures: A collection of name/value pairs. In various languages, this is realized as an object, record, struct, dictionary, hash table, keyed list, or associative array. An ordered list of values. In most languages, this is realized as an array, vector, list, or sequence. These are universal data structures. Virtually all modern programming languages support them in one form or another. It makes sense that a data format that is interchangeable with programming languages also be based on these structures.[8]

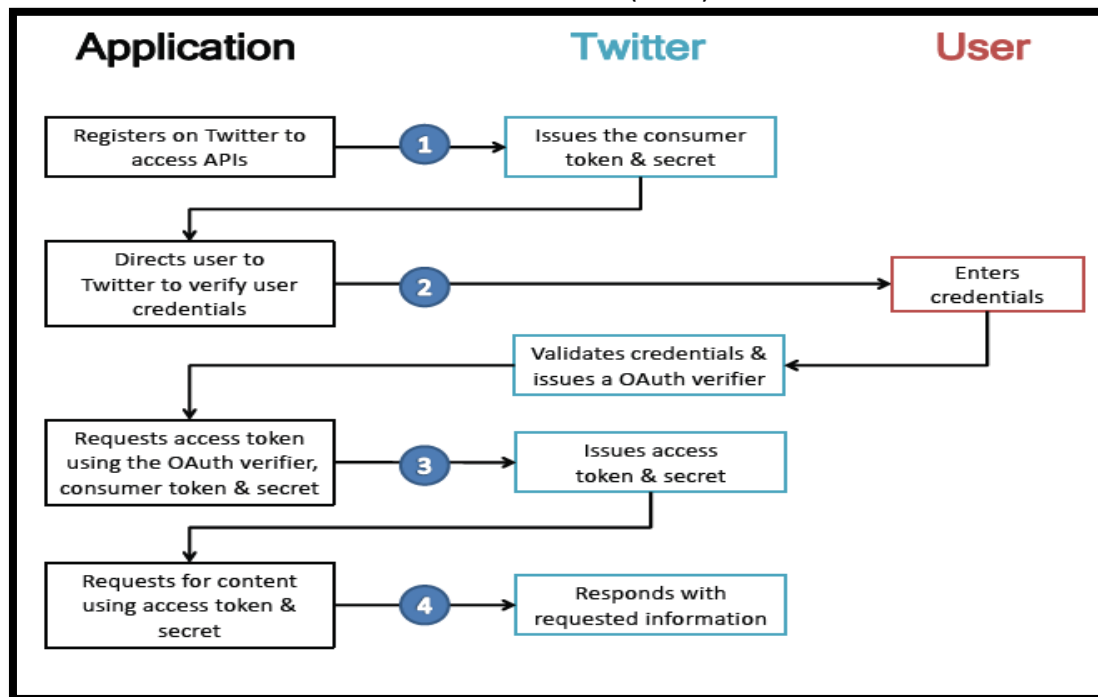
Twitter APIs can be accessed only via authenticated requests. Twitter uses Open Authentication and each request must be signed with valid Twitter user credentials. Access to Twitter APIs is also limited to a specific number of requests within a time window called the rate limit. These limits are applied both at individual user level as well as at the application level. A rate limit window is used to renew the quota of permitted API calls periodically. The size of this window is currently 15 minutes.

## OPEN AUTHENTICATION (OAuth)

Open Authentication (OAuth) is an open standard for authentication, adopted by Twitter to provide access to protected information. Passwords are highly vulnerable to theft and OAuth provides a safer alternative to traditional authentication approaches using a three-way handshake. It also improves the confidence of the user in the application as the user's password for his Twitter account is never shared with third-party applications.[5]

The authentication of API requests on Twitter is carried out using OAuth. The Fig. summarizes the steps involved in using OAuth to access Twitter API. Twitter APIs can only be accessed by applications. Below we detail the steps for making an API call from a Twitter application using OAuth :

FIGURE 2.0: OPEN AUTHORIZATION (OAUTH) WORKFLOW



### STEPS FOR WORKFLOW OF OPEN AUTHORIZATION

Step1. Applications are also known as consumers and all applications are required to register themselves with Twitter. Through this process the application is issued a consumer key and secret which the application must use to authenticate itself to Twitter.

Step 2. The application uses the consumer key and secret to create a unique Twitter link to which a user is directed for authentication. The user authorizes the application by authenticating himself to Twitter. Twitter verifies the user's identity and issues a OAuth verifier also called a PIN.

Step 3. The user provides this PIN to the application. The application uses the PIN to request an "Access Token" and "Access Secret" unique to the user. The "Access Token" and "Access Secret" for a user do not change and can be cached by the application for future requests.

### REGISTER OAUTH CREDENTIALS TO TWITTER R SESSION

**Function Name:** registerTwitterOAuth ()

#### DESCRIPTION

This function is used to provide OAuth access tokens to your twitter session. This will enable many bits of functionality as well as allow other commands to provide more options.

**Usage:**  
getTwitterOAuth (consumer\_key, consumer\_secret)  
registerTwitterOAuth (oauth)

#### ARGUMENTS

**consumer\_key** - The consumer key supplied by Twitter  
**consumer\_secret** - The consumer secret supplied by Twitter  
**oauth** - An object of class OAuth

#### DETAILS

The getTwitterOAuth function is a wrapper around the call to OAuthFactory and registerTwitterOAuth, which will return the registered credentials. If your workflow is such that you save the credentials and register them in later R sessions, feel free to do this using registerTwitterOAuth registerTwitterOAuth will store the OAuth argument in an environment which is then accessed throughout the package. When API calls are made, instead of going through RCurl they will go through the ROAuth package. Three URLs will need to be used for the initial OAuth handshake.

#### VALUE

TRUE on success, otherwise an error will be thrown.

FIGURE 3.0: GENERATING OAUTH FOR A USER

#### Generating OAuth Token for a User

```

>library(twitter)
>library(ROAuth)
>library(plyr)
>library(stringr)
>reqURL <- "https://api.twitter.com/oauth/request_token"
>accessURL <- "http://api.twitter.com/oauth/access_token"
>authURL <- "http://api.twitter.com/oauth/authorize"
>consumerKey <- "xxxxxxxxxxxxxxxxxxxx"
>consumerSecret <- "xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx"
>twitCred<-OAuthFactory$new
(consumerKey=consumerKey,consumerSecret=consumerSecret,requestURL=reqURL,accessURL=accessURL,authURL=authURL)
>library(RCurl)
>options(RCurlOptions = list(cainfo = system.file("CurlSSL", "cacert.pem",package="RCurl"))))
>twitCred$handshake()
  
```

## TWITTER DOMAIN (REQUIREMENTS)

Twitter messages have certain unique attributes that make it complex to analyze and classify while training the data sets. Some of them are as follows:

**LENGTH:** The maximum length of a Twitter message is 140 characters, thus the limited length of tweet, might comprise of one or two sentences. Thus researcher task is the simple breakdown of the tweet to extract the polarity from it.

**AVAILABLE DATA:** The twitter API supports searching tweets pertaining to a query thus we can obtain a large training set using the twitter API.

**LANGUAGE MODEL.** The language under consideration is English. Basic problem faced is the limited length which encourages the user to use slang and acronyms. Moreover users post tweet from different devices including mobile phones, thus increasing the rate of misspelling words.

**NEGATIVE SENTENCES:** Many people would write their tweets with negation before the adjective or verb, which complicates the training set..

**CONFUSING POLARITY:** For certain tweets there will be a confusion or disagreement for the polarity to be assigned.

**DEALING WITH EMOTICONS:** The training data should contain clean labels. The emoticons serve as a noisy label. There are some cases in which the emoticon label would normally not make sense to a human evaluator. For example user ayakyl tweeted; hurrah :) won't have class today!!!! If we remove the emoticon from this phrase, it becomes hurrah won't have class today!!!! in which a human evaluator would normally assess as negative.

**CASUAL LANGUAGE:** Tweets contain very casual language. For example, a user may want to right the word happy as: happpppppyy happpiiee happy hap-e besides showing that people are happy; this emphasizes the casual nature of Twitter and the disregard for correct spelling.

**USERNAMES:** Users often include usernames in their tweets, in order to address messages to particular users. A de facto standard is to include the @ symbol before the username

After receiving the consumer key and consumer secret key, the user could register the secret keys with the Twitter. As stated in Listing1.1, we could store the secret keys in variables and using "twitCred\$handshake()" function, the consumer key and consumer secret key is registered to Twitter, requesting for access into the public tweets in the Twitter.

### NOTE

For Mac OS: The registration process could be done only once.

For Windows OS: The registration process must be repeated every time the user tries to access the tweets.

FIGURE 4.0: REGISTRATION WITH TWITTER TO ACCESS THE PUBLIC TWEETS

**Registration with Twitter to access the public tweets**

To enable the connection, please direct your web browser to:  
[http://api.twitter.com/oauth/authorize?oauth\\_token=xx](http://api.twitter.com/oauth/authorize?oauth_token=xx)  
 When complete, record the PIN given to you and provide it here: xxxxxxxx      ##7 Digit PIN Number  
 >registerTwitterOAuth(twitCred)  
 ##returns TRUE on success

When the handshake with the Twitter DB is over, it returns a URL to where the Web browser must be directed. When the user accesses the URL, an OAuth Token is returned which is a 7-digit number. This number is again entered into the R console. The command "registerTwitterOAuth(twitCred)" is used to complete the registration process, which enables the user to access the Twitter API for fetching users' tweets. It returns 'TRUE' to indicate the connection between the R and Twitter API.

## SCIENTIFIC FUNDAMENTALS AND SENTIMENT ANALYSIS

As people are free to give their opinions on anything, example they buy a brand and they express their views on brands in various social networking sites like Twitter, Facebook, Discussion forums, and blogs. Sentiment analysis, also called Opinion mining, is the field of study that analyzes people's opinions, sentiments, evaluations, appraisals, and emotions towards entities such as products, services, organizations, individuals, issues, events, topics and their attributes. In Conversation mining the additional task is to determine the nature of opinion: whether it is positive or neutral in general. Opinion mining is a type of Natural language processing for tracking the attitudes, feelings or appraisals of the public about particular topic, product or services. Sentiment analysis can be useful in several ways

## CONCLUSION

This research introduce the basic of introductory idea about the Twitter , TWITTER API , Streaming API , Open Authorization (OAuth) Workflow, Register OAuth credentials to twitter R session. . With the information overload, Web sentiment mining is a new and promising research issue to help users in gaining insight into overwhelming information on the web social media. In this paper, we present a preliminary discussion about crawling data from twitter. There still remain many areas for further research, such as the design of efficient algorithms for opinion mining or sentiment mining for large document collections, and so on. We can do research in Some new techniques can provide the user with the opportunity to analyze the twitter log and determine the sentiment of the text, whether it is positive or negative, which is extended to strength of polarity.

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## TREND ANALYSIS OF MARUTI SUZUKI (2010-2013)

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## ABSTRACT

The aim of the present study is to find the financial position of Maruti Suzuki for three years and performed trend analysis, a part of Financial statement analysis. Trend analysis is performed through analysis of reported financial information by using different accounting tools and techniques. Trend analysis was performed on financial statements of Maruti Suzuki. For this purpose I had used secondary data to analyze trend of various variables. I had analyzed where the company is doing well and where it is lagging behind. The objective was to verify if there are significant differences between the base year 2010-2011 and the current years 2012-2013 and 2011-2012. The goal of this research was to analyze current and future trends of the allied management disciplines that influence project management. The variables used for the trend analysis are total revenue, profit before tax, profit after tax, total expenses, purchases, net sales, debtors, creditors. It was found out that the year 2012 saw a downfall in financial performance but it recovered in 2013.

## KEYWORDS

Financial Statements, Trends, Trend Percentage, Variables.

## 1.0 INTRODUCTION

A financial statement is a formal record of the financial activities of a business, person, or other entity. Relevant financial information is presented in a structured manner and in a form easy to understand. The objective of financial statements is to provide information about the financial position, performance, and changes in financial position of an enterprise that is useful to a wide range of users in making economic decisions. They typically include:-

- Income statement
- Position statement (Balance sheet)

**Income statement:** Also known as statement of comprehensive income, statement of revenue and expense, profit and loss or P&L reports on a company's income, expenses and profits over a period of time. The profit and loss statement provides information on the operations of the enterprise.

**Balance sheet:** Also referred to as a statement of financial position, reports on a company's assets, liabilities and ownership equity at a given point of time. It is often described as a "snap shot of organization's financial condition".

**Financial statement analysis:** Financial statement analysis means analysis, comparison and interpretations of financial data to achieve the desired results. The purpose of financial statement analysis is to examine past and current financial data so that a company's performance and financial position can be evaluated and future risks and potential can be estimated. Financial statement analysis can yield valuable information about trends and relationships, the quality of a company's earnings, and strengths and weaknesses of the financial position.

## 1.1 CONCEPT OF TREND ANALYSIS

It is the practice of collecting information and attempting to spot a pattern or trend in the information. Trend analysis can be defined as "A comparative analysis of a company's financial ratios over time". Trend analysis has a great advantage that it can also be used to predict the future events. This is possible by forecasting the future cash flow based on the data available of the past. With the help of trend analysis, we can predict the future and track the variances to add performance.

However, in Management Accountancy, the calculation of trends is based on the data of the past. This is favorable in deducing the current situation of the company and increase in the financial position of the company and growth over the past years.

Apart from investments and financial data of the company, the trend analysis is also a useful tool that can be used effectively for the projections. This allows the company to conduct market research and draw trends to forecast the demand of different products. This helps in the marketing purposes and company can deduce results to select the right marketing approach to address the issues. Trend analysis can pretty much apply to all the techniques, which requires forecasting therefore, it is a very useful tool in business.

Business trend analysis is a way for companies to determine future results in economic marketplaces. Reviewing past information can help management to understand current trends and where a market niche may be for a product. Current operations may also be reviewed by trend analysis to determine the strength of certain product lines and if the market will maintain the current supply of goods.

"Trend analysis tries to predict a trend like a bull market run and ride that trend until data suggests a trend reversal (eg. bull to bear market) Trend analysis is helpful because moving with trends and not against them, will lead to profit for an investor".

## 1.2 OBJECTIVES OF MEASURING TREND

There are four main objectives of measuring Trend in a time series data:

1. To study past growth or decline of the series. On ignoring the short term fluctuations, trend describes the basic growth or decline tendency of the data.
2. Assuming that the same behavior would continue in future also, the trend curve can be extended for forecasting future.
3. In order to analyze the influence of other factors the trend may first be measured and then eliminated from the observed values.
4. Trend values of two or more time series can be used for their comparison

## 1.3 ADVANTAGES OF USE OF TRENDS

Forecasting future events is always a risky endeavor. A properly constructed trend analysis helps businesses minimize the risk of marketing and financial strategies. Spotting valid trends can give companies a head start in defeating their competition or introducing new products or services. Filling wants and needs of potential customers leads to wonderful sales and revenue. A valid trend analysis can identify these wants and needs before they become dominant, giving your business valuable and useful information before your competition can react.

- Helps the management in decision making
- Helps the investors in investing decisions
- Helps the shareholders who are the real owners to know their share of earnings
- Helps the employees in knowing their contribution
- Helps the government in levying taxes

## 2.0 OBJECTIVES OF THE STUDY

1. To understand the concept of Trend Analysis and use of trends
2. To know the procedure and use of various variables in calculation of trends



3. To study the past growth or decline of the series
4. To study the financial position of the company for the period 2010-2013

### 3.0 RESEARCH METHODOLOGY

The data collected for this analysis is the secondary data. The information has been collected from various books, websites, annual reports and cash flow statements of the company.

### 4.0 SCOPE OF THE STUDY

The study applies to only Maruti Suzuki India limited and does not reflect to other companies of automobile sector. Further the project is applicable only from 2010-2011 to 2012-2013 and does not reflect to other years and only few variables have been taken.

### 5.0 PROCEDURE FOR CALCULATION OF TRENDS

Step1: Select the base year

Step2: For each line item, divide the amount in each non base year by the amount in the base year and multiply by 100

Note: the base year percentage is always 100. A trend percentage of less than 100 means there is a decrease in trend whereas a trend percentage above 100 represents increase in trend

Step 3: calculate the difference between the non-base year percentage and the base year percentage, a negative difference indicates decrease in trend whereas a positive difference indicates an increase in trend

Step4: Calculate the relationship between the trend and non-trend years

The percentage can be found this way and if the current-year percentages were greater than previous year percentage, this would mean that current-year result is better than the previous year result.

The study deals with the trend analysis of various variables such as:-

1. Financial results
2. Purchases
3. Net sales
4. Expenditure on research and development
5. Total expenses
6. Fixed assets
7. Investments
8. Current assets
9. Trade debtors and Trade creditors

#### 5.1 PRECAUTIONS FOR CALCULATING TREND PERCENTAGES

1. The accounting principles and practices must be followed constantly over the period for which the analysis is made. This is necessary to maintain consistency and comparability.
2. The base year selected should be normal and representative year. Every item in the base statement should be stated as 100.
3. Trend percentages should be calculated only for those items which have logical relationship with one another
4. Trend ratios of each item in other statement is calculated with reference to the same item in the base statement by using the following formula:  
(Absolute value of item in the statement under study/Absolute value of the same item in the base statement) × 100
5. Trend percentages should also be carefully studied after considering the absolute figures on which these are based. Otherwise, they may give misleading conclusions.
6. To make the comparison meaningful, trend percentages of the current year should be adjusted in the light of price level changes as compared to the base year.

#### 5.2 USE OF VARIOUS VARIABLES IN CALCULATION OF TREND

**USE OF SALES IN CALCULATION OF TREND:** Trend forecasting is a complicated but useful way to look at past sales or market growth, determine possible trends from that data and use the information to extrapolate what could happen in the future. Marketing experts typically utilize trend forecasting to help determine potential future sales growth. Many areas of a business can use forecasting, and examining the concept as it relates to sales can help you gain an understanding of this tool.

**USE OF EXPENSES IN CALCULATION OF TREND:** It is designed specifically for individuals who want to look at summarized expense data over time. Its goal is to be easier than writing your own reports. Expenses Trend Analysis moves beyond reports to provide analysis. This means we don't have to start with a specific question. We may have a question to begin with, but what we really want is to learn about our expenses and analyze the data. This product is not intended to provide a level of detail useful for reconciliation or transaction listings. Although that is valuable information, reconciliation activities should be performed utilizing the university's standard financial transaction listings. Rather, this product is intended to help users identify expense trends and outliers through the use of summarized data.

**USE OF REVENUE IN CALCULATION OF TREND:** Well-formed top-line projections come from working on a few key aspects of company analysis. First, historic financial analysis can help build expectations for revenue growth assumptions, taking into consideration recent events that might cause revenue growth to diverge from recent trends.

**USE OF PURCHASES IN CALCULATION OF TREND:** A threat to availability can lead to unpredictable fluctuations in price and quality. It is therefore important to identify potential risks to our supplies of raw materials. We must anticipate those risks, to safeguard our economy and competitive position. This means being more careful in dealing with the supply of raw materials while still taking account of economic, geopolitical and social challenges.

**USE OF ASSETS IN CALCULATION OF TREND:** The behavior of asset prices is essential for many important decisions, not only for professional investors but also for most people in their daily life. The choice on how to save – in the form of cash, bank deposits or stocks, or perhaps a single-family house – depends on what one thinks of the risks and returns associated with these different forms of saving. Asset prices are also of fundamental importance for the macro economy, as they provide crucial information for key economic decisions regarding consumption and investments in physical capital, such as buildings and machinery. While asset prices often seem to reflect fundamental values quite well, history provides striking examples to the contrary, in events commonly labeled as bubbles and crashes. Mispricing of assets may contribute to financial crises and as the recent global recession illustrates, such crises can damage the overall economy. Today, the field of empirical asset pricing is one of the largest and most active subfields in economics.

**USE OF CASH FLOWS IN CALCULATION OF TREND:** Although reported earnings (or losses) per share most often take the spotlight in the financial headlines, cash flow can be an even more valuable measure of a company's long-term financial health. Cash flow is exactly what it sounds like. It is cash generated and used by a company's business. It is reported in a financial statement showing three years of data in the company's annual 10-K filing with the Securities and Exchange Commission (SEC). It is also reported quarterly in a company's 10-Q filings with the SEC.

**USE OF DEBTORS IN CALCULATION OF TREND:** Are the amounts owed to a business by its customers, and are comprised of a potentially large number of invoiced amounts. Accounts receivable constitute the primary source of incoming cash flow for most businesses, so you should be able to analyze these invoices in aggregate to ascertain the health of the underlying cash flows.



**6.0 ANALYSIS OF FINANCIAL RESULTS OF MARUTI SUZUKI (2010-2013)****TABLE 1**

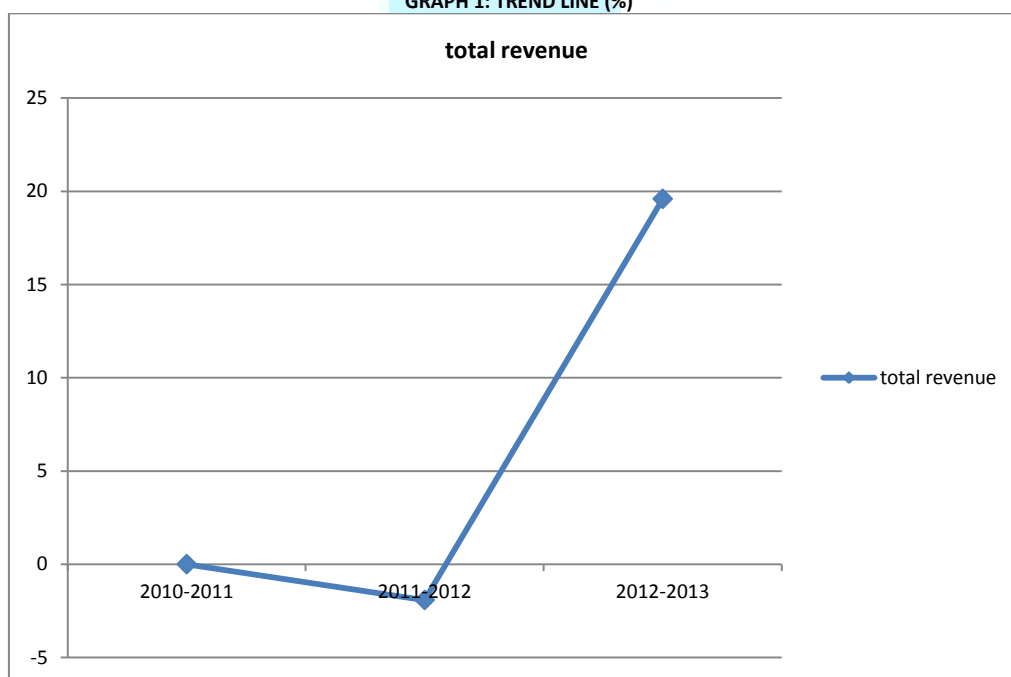
Particulars	2012-2013(in millions)	2011-2012(in millions)	2010-2011(in millions)
Total revenue	444,003	364,139	371,272
Profit before tax	29,910	21,462	31,088
Tax expense	5,989	5,110	8,202
Profit after tax	23,921	16,352	22,886
Balance brought forward	130,777	118,578	100,499
Profit available for appropriation	158,263	134,930	123,385
Appropriations:			
General reserve	2,392	1,635	2,289
Proposed dividend	2,417	2,167	2,167
Corporate dividend tax	411	351	351
Balance carried forward to balance sheet	153,043	130,777	118,578

**FORMULA TO CALCULATE THE TREND PERCENTAGE**

Trend % = (Absolute value of item in the statement under study/Absolute value of the same item in the base statement) × 100

**CALCULATION OF TRENDS****TABLE 2: TOTAL REVENUE**

Years	Amount	% of base year	% increase or decrease
2010-2011	3,71,272	100	-
2011-2012	3,64,139	98.08	(1.92)
2012-2013	4,44,003	119.59	19.59

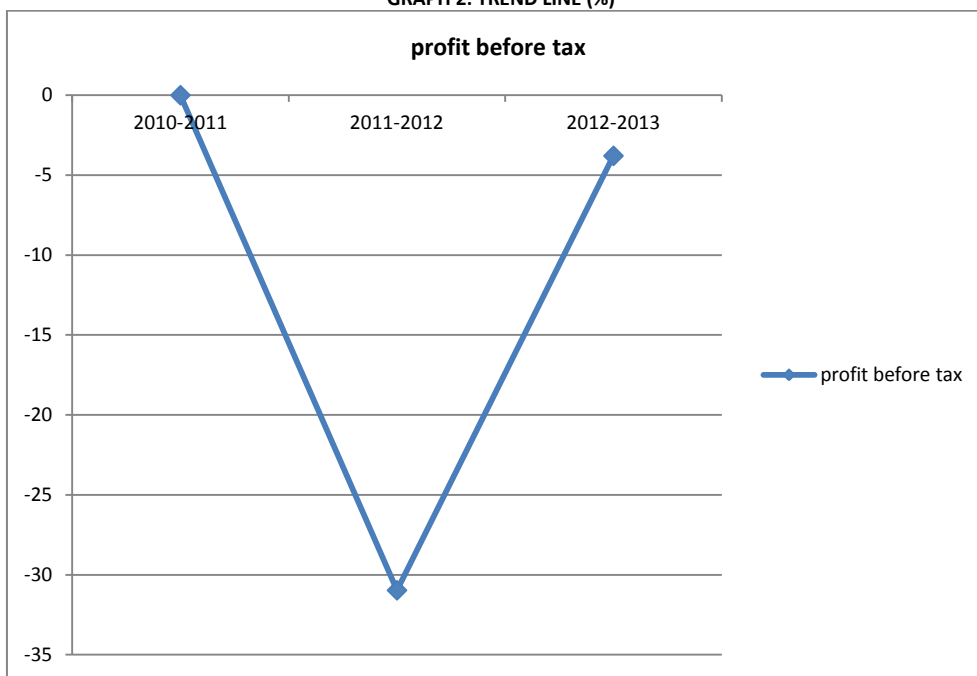
**GRAPH 1: TREND LINE (%)**

**Inference:-** The year 2011-2012 saw decrease in the trend by 1.92% as compared to the base year 2010-2011 whereas the year 2012-2013 saw an enormous increase of 19.59%.

**TABLE 3 : PROFIT BEFORE TAX**

Years	Total amount	% of base year	% increase or decrease
2010-2011	31,088	100	-
2011-2012	21,462	69.03	(30.97)
2012-2013	29,910	96.21	(3.79)

GRAPH 2: TREND LINE (%)

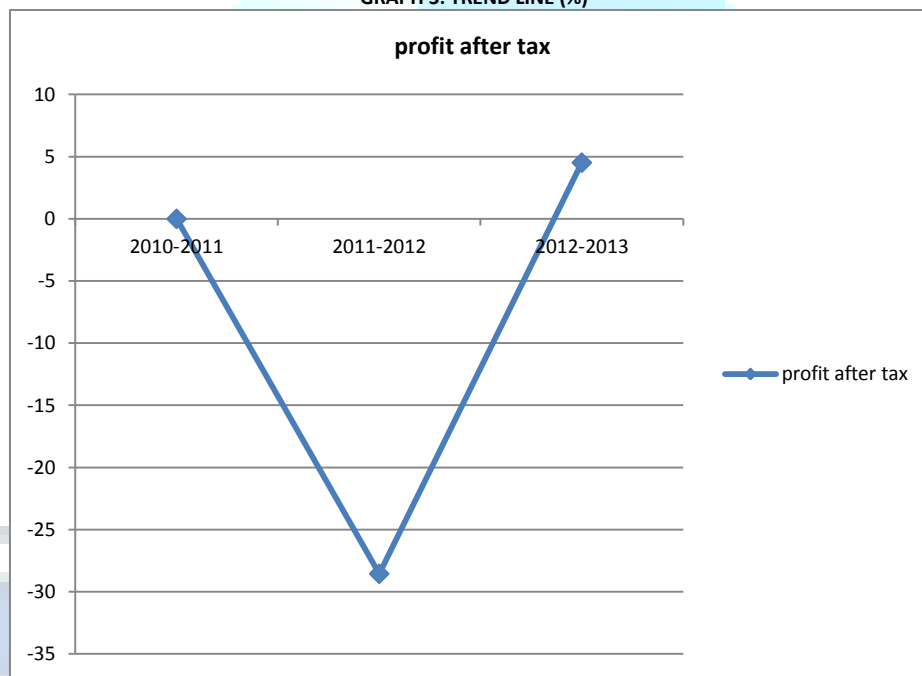


**Inference :-**The profit before tax has decreased by 30.97% in 2011-2012 as compared to the base year 2010-2011 whereas it has decreased to 3.79% in 2012-2013 as compared to the base year.

TABLE 4: PROFIT AFTER TAX

Years	Total amount	% of base year	% increase or decrease
2010-2011	22,886	100	-
2011-2012	16,352	71.45	(28.55)
2012-2013	23,921	104.52	4.52

GRAPH 3: TREND LINE (%)



**Inference :-**The year 2011-2012 saw a drastic decrease of 28.55% as compared to 2010-2011 whereas it reached an increase of 4.52% in the year 2012-2013.

TABLE 5: EXPENDITURE INCURRED IN RESEARCH AND DEVELOPMENT

Particulars	2012-2013	2011-2012	2010-2011
A. Capital expenditure	2,613	1,491	2,316
B. Revenue expenditure	2,533	2,204	1,847
TOTAL	5,146	3,695	4,163

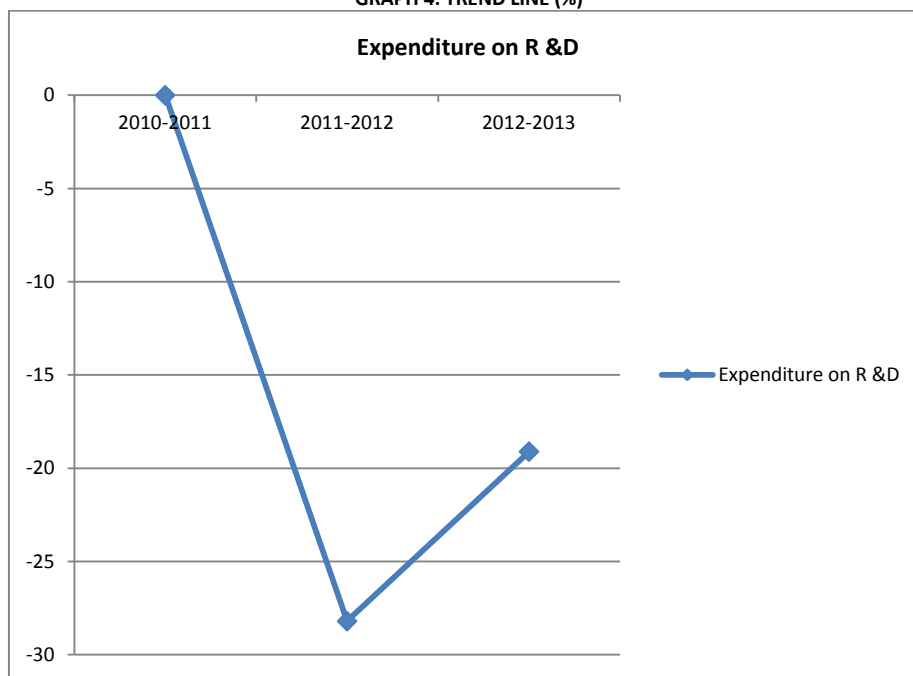
The year 2012-2013 has recorded an increase in the expenditure on Research and Development much more than the years 2011-2012 and 2010-2011.

#### CALCULATION OF TRENDS

TABLE 6: EXPENDITURE ON RESEARCH AND DEVELOPMENT

Years	Total amount	% of base year	% increase or decrease
2010-2011	5,146	100	-
2011-2012	3,695	71.80	(28.2)
2012-2013	4,163	80.89	(19.11)

GRAPH 4: TREND LINE (%)



**Inference:-** The year 2011-2012 saw a decrease of 28.2% as compared to the base year 2010-2011 and the year 2012-2013 saw a decrease of 19.11 as compared to the base year 2010-2011.

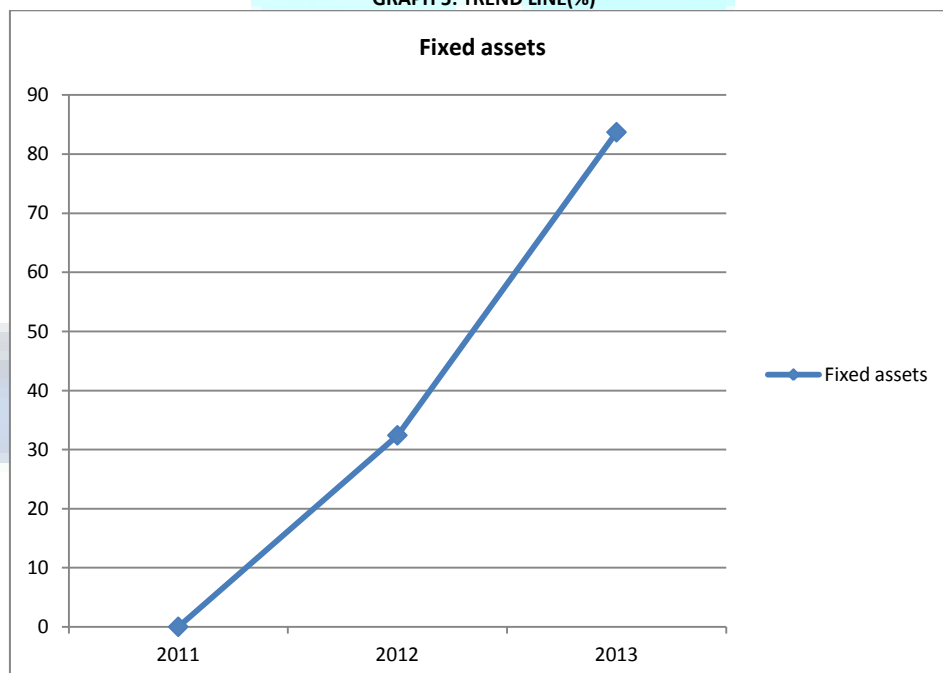
TABLE 7: FIXED ASSETS OF MARUTI SUZUKI

Particulars	2013	2012	2011
Tangible assets	95,765	73,108	54,837
Intangible assets	2,227	2,099	457
Capital Work- in- progress	19,422	9,419	8,625
Total	117,414	84,626	63,919

TABLE 8: CALCULATION OF TRENDS

Years	Total amount	% of base year	% increase or decrease
2011	63,919	100	-
2012	84,626	132.40	32.40
2013	1,17,414	183.69	83.69

GRAPH 5: TREND LINE(%)



**Inference:-** The year 2012 saw an increase of 32.40% as compared to 2011 it increased further to 83.69% in the year 2013.

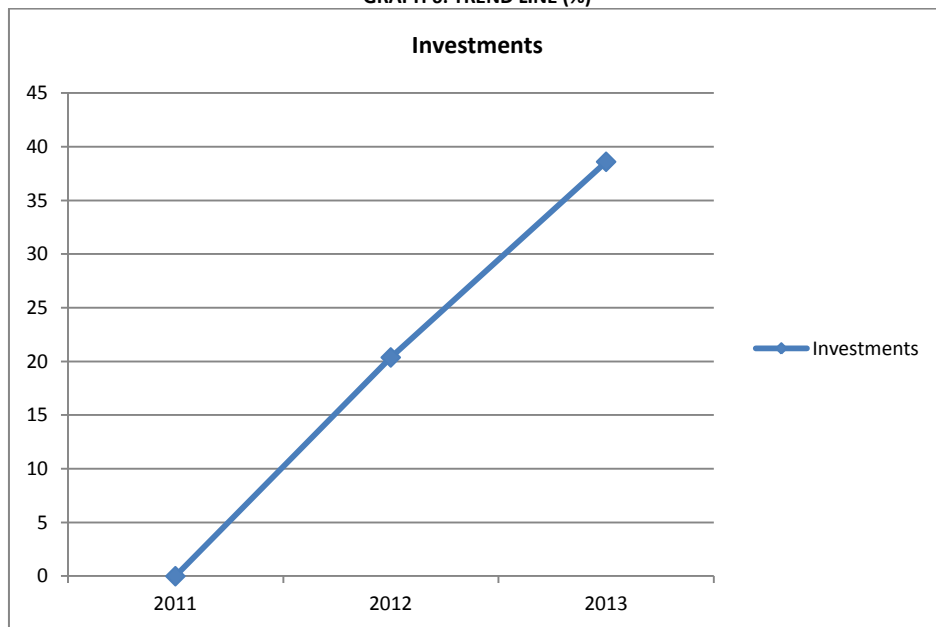
TABLE 9: INVESTMENTS OF MARUTI SUZUKI

Particulars	2013	2012	2011
Current investments	52,298	47,541	39,956
Long tem investments	18,485	13,933	11,112
Total	70,783	61,474	51,068

TABLE 10: CALCULATION OF TRENDS

Years	Total amount	% of base year	% increase or decrease
2011	51,068	100	-
2012	61,474	120.38	20.38
2013	70783	138.61	38.61

GRAPH 6: TREND LINE (%)



**Inference:-** The year 2012 saw an increase of 20.38% as compared to the base year 2011 and it further increased to 38.61% in the year 2013.

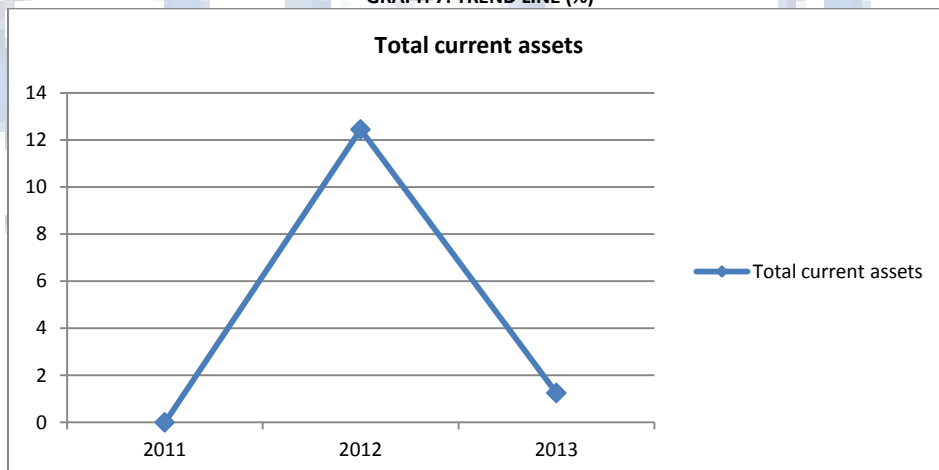
TABLE 11: CURRENT ASSETS OF MARUTI SUZUKI

Particulars	2013	2012	2011
Inventories	18,407	17,965	14,150
Trade receivables	14,237	9,376	8,245
Cash and bank balances	7,750	24,361	25,085
Short term loans and advances	11,153	7,783	6,836
Other current assets	5,403	3,764	1,930
Total	56,950	63,249	56,246

TABLE 12: CALCULATION OF TRENDS

Years	Total amount	% of base year	% increase or decrease
2011	56,246	100	-
2012	63,249	112.45	12.45
2013	56,950	101.25	(1.25)

GRAPH 7: TREND LINE (%)



**Inference:** As compared to the base year 2011, the year 2012 saw an increase of 12.45%, whereas the year 2013 saw a decrease by 1.25%.

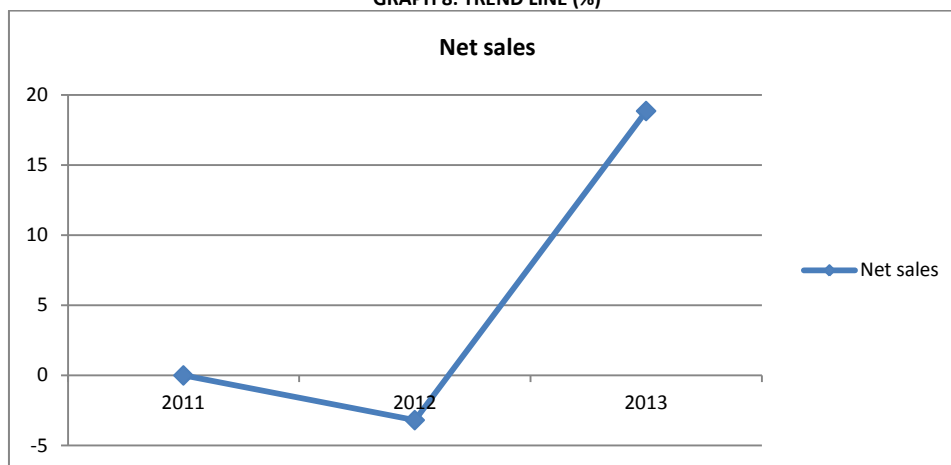
TABLE 13: NET SALES

Particulars	2013	2012	2011
Gross sale of products	4,81,147	3,86,141	4,01,021
Less: excise duty	(55,021)	(39,082)	(42,531)
Net sales	4,26,126	3,47,059	3,58,490

TABLE 14: CALCULATION OF TRENDS

Years	Total amount	% of base year	% increase or decrease
2011	3,58,490	100	-
2012	3,47,059	96.81	(3.19)
2013	4,26,126	118.87	18.87

GRAPH 8: TREND LINE (%)



**Inference:-** The year 2012 saw a fall of 3.19% as compared to 2011 whereas the year 2013 saw an enormous increase of 18.87% increase.

TABLE 15: TOTAL EXPENSES OF MARUTI SUZUKI

Particulars	2013	2012	2011
Cost of raw materials	3,05,741	2,67,055	2,71,418
Purchases	19,613	15,325	12,781
Depreciation and amortization	18,612	11,384	10,135
Other miscellaneous expenses	70,127	48,913	45,850
Total	4,14,093	3,42,677	3,40,184

## CALCULATION OF TRENDS

TABLE 16: PURCHASES

Years	Total amount	% of base year	% increase or decrease
2011	12,781	100	-
2012	15,325	119.90	19.90
2013	19,613	153.45	53.45

**Inference:-** The year 2012 saw an increase of 19.90% as compared to the base year 2011 and the year 2013 saw a further increase of 53.45% compared to base year.

TABLE 17: TOTAL EXPENSES

Years	Total amount	% of base year	% increase or decrease
2011	3,40,184	100	-
2012	3,42,677	100.73	0.73
2013	4,14,093	121.73	21.73

**Inference:-** The year 2012 saw a slight increase of 0.73% as compared to base year 2011 whereas the year 2013 saw much increase of 21.73% compared to base year.

GRAPH 9: TREND LINE (%)

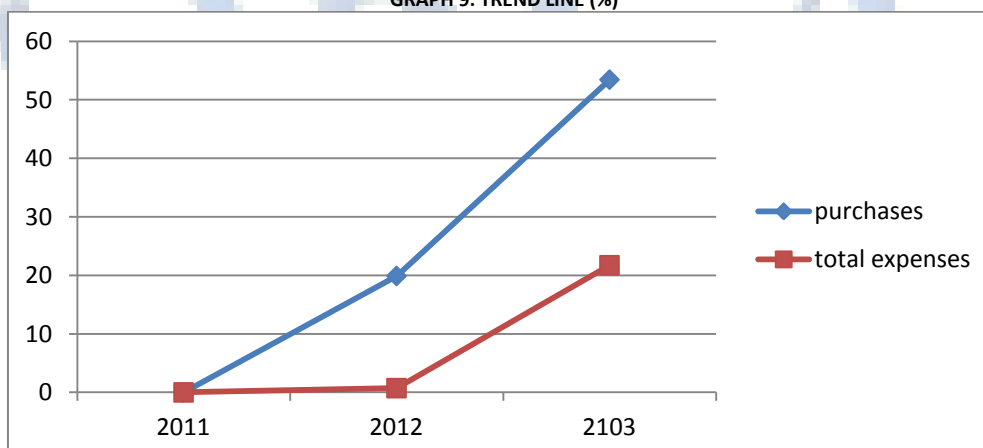




TABLE 18: DEBTORS AND CREDITORS OF MARUTI SUZUKI

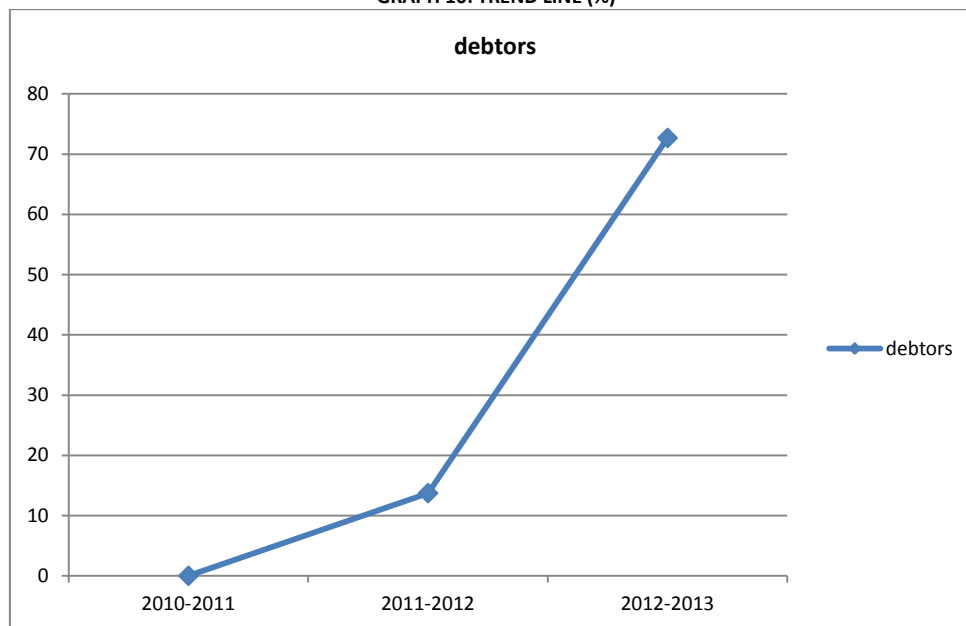
Particulars	2010-2011	2011-2012	2012-2013
Trade debtors	8,245	9,376	14,237
Trade creditors	26,083	33,499	41,674

## DEBTORS

TABLE 19: CALCULATION OF TRENDS

Year	Amount	% of base year	% increase or decrease
2010-2011	8,245	100	-
2011-2012	9,376	113.72	13.72
2012-2013	14,237	172.67	72.67

GRAPH 10: TREND LINE (%)

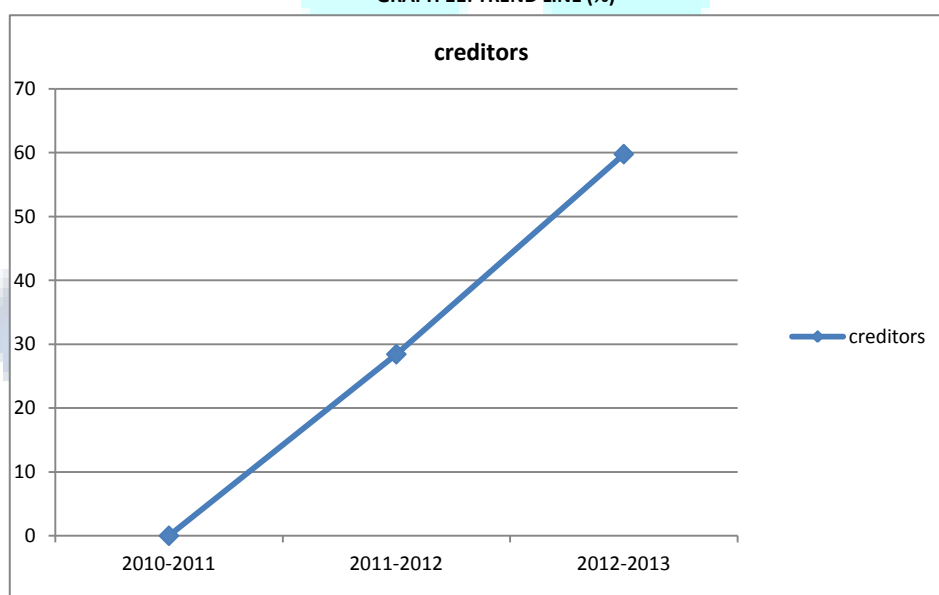


**Inference:** The year 2012-2013 saw a rise in debtors by 72.67% as compared to 2010-2011 and 13.72% in the year 2011-2012.

TABLE 20: CREDITORS

Years	Amount	% of base year	% increase or decrease
2010-2011	26,083	100	-
2011-2012	33,499	128.43	28.43
2012-2013	41,674	159.77	59.77

GRAPH 11: TREND LINE (%)



**Inference:-** The year 2012- 2013 saw an increase of 59.77% as compared to 2010-2011 and 28.43% in the year 2011-2012.

## 7.0 FINDINGS

- The total revenue has improved in the three years. The total revenue in 2012-2013 was Rs 444,003 which was 22% more than 2012 and 19.59% more than the year 2010-2011.
- The profit before tax has shown an increase of 39% in the year 2012-2013 as compared to 2011-2012 but it showed a decrease as compared to 2010-2011.
- The profit after tax in 2012-2013 has recorded an increase of 46% as compared to 2011-2012 and an increase of 4.52% as compared to 2010-2011.

- Due to the decrease faced in the year 2011-2012, the expenditure on research and development has increased in 2012-2013.
- The amount of fixed assets, investments has increased in the three years on a consistent basis whereas the current assets have decreased in 2012-2013 as compared to 2011-2012 and increased in the year 2011-2012 as compared to 2010-2011.
- The net sales has recorded an increase in 2013 as compared to 2011 whereas the year 2012 recorded a decline.
- The total expenses and purchases have increased in the three years and it is also found that purchases are main reason for the change of trends.
- The trend of creditors have risen on a straight line while debtors have risen more than 75% as compared to 2010-2011.

## 8.0 SUGGESTIONS

- Though the company has been investing more on investments and fixed assets which benefits the company in the long run .So it has been suggested that the company has to maintain sufficient current assets also to meet day to day activities.
- Though the company has increased net sales of which major portion was found to be of credit sales which implies trade debtors. With the increase in trade debtors, the company may have to face the risk of default. So it has been suggested that the company has to go for more sales on cash basis in order to avoid risk of bad debts.
- Though the major portion of purchases is of credit purchases which implies trade creditors. It is suggested that the company has to purchase more on cash in order to avoid risk of default in payment,.
- The increase in debtors and creditors with parallel increase in net sales and purchases implies that the company has not sufficient cash in hand. This may lead to low liquidity. The company has been suggested to look after the short term solvency position.
- The total revenue has shown an increase whereas the net sales has reduced which indicates that the income may be from non-operating activities such as income from investments this may lead to decrease in operating income. Hence, the company is suggested to increase its sales in order to increase its operating income.

## 9.0 CONCLUSION

Financial statement analysis is the process of underlying the risk and profitability of a firm through analysis of reported financial information, by using different accounting tools and techniques. Trend analysis is the process of analyzing company's financial ratios over time. Trend analysis is based on the idea that what happens in past gives traders an idea of what will happen in future. Trend analysis is one of the tools for the analysis of the company's monetary statements for the investment purposes. Investors use this analysis tool a lot in order to determine the financial position of the business. In trend analysis, the financial statements of the company are compared with each other for the several years after converting them in the percentage. The study deals with the calculation of trends, one of the important tool for financial analysis to measure and evaluate the increase or decrease in variables such as purchases, sales, total expenses, total revenue, expenditure on research and development etc. It has been concluded that though the financial performance of the company saw a decline in the year 2011-2012, it has improved its performance in the year 2012-2013.

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## ANNEXURE

STATEMENTS OF PROFIT AND LOSS ACCOUNT (in millions)

Particulars	For the year ended 31-12-2013	For the year ended 31-12-2012	For the year ended 31-12-2011
<b>REVENUE FROM OPERATIONS</b>			
Gross sale of Products	4,81,147	3,86,141	4,01,021
Less: excise duty	55,021	39,082	42,531
Net sale of Products	4,26,126	3,47,059	3,58,490
Other Operating Revenue	9,753	8,812	7,694
	4,35,879	3,55,871	3,66,184
Other Income	8,124	8,268	5,088
Total Revenue	4,44,003	3,64,139	3,71,272
<b>EXPENSES</b>			
Cost of material consumed	3,05,741	2,67,055	2,71,418
Purchase of Stock-in-Trade	19,613	15,325	12,781
Change in Inventories of Finished Goods, work- in- progress and Stock-in-Trade	234	(1,297)	(560)
Employees Benefit Expenses	10,696	8,013	7,036
Finance Costs	1,898	552	250
Depreciation and Amortization Expense	18,612	11,384	10,135
Other Expenses	57,737	42,072	39,381
<b>Particulars</b>	<b>For the year ended 31-12-2013</b>	<b>For the year ended 31-12-2012</b>	<b>For the year ended 31-12-2011</b>
Vehicles / Dies for Own Use	(438)	(427)	(257)
Total Expenses	4,14,093	3,42,677	3,40,184
<b>PROFIT BEFORE TAX</b>	<b>29,910</b>	<b>21,462</b>	<b>31,088</b>
Less: Tax Expense-Current tax	7,228	4,138	8,101
-MAT Credit Availed	(904)	-	
-Deferred Tax	(335)	972	101
<b>PROFIT FOR THE YEAR</b>	<b>23,921</b>	<b>16,352</b>	<b>22,886</b>
Basic/Diluted Earnings Per Share of Rs 5 each (Rs)	79.19	56.60	79.22

**BALANCE SHEET (in millions)**

Particulars	As at 31-12-2013	As at 31-12-2012	As at 31-12-2011
<b>EQUITY AND LIABILITIES</b>			
Shareholders' Funds			
Share Capital	1,510	1,445	1,445
Reserves and Surplus	1,84,279	1,50,429	1,37,230
	<b>1,85,789</b>	<b>1,51,874</b>	<b>1,38,675</b>
Non-current liabilities			
Long Term Borrowings	5,429	-	1,390
Deferred Tax Liabilities (Net)	4,087	3,023	1,644
Other Long Term Liabilities	1,036	966	959
Long Term Provisions	2,259	1,693	1,396
	<b>12,811</b>	<b>5,682</b>	<b>5,389</b>
Current liabilities			
Short Term Borrowings	8,463	10,783	312
Trade Payables	41,674	33,499	26,083
Other Current Liabilities	11,661	15,892	9,930
Short Term Provisions	6,482	5,292	3,862
	<b>62,280</b>	<b>65,466</b>	<b>40,187</b>
<b>TOTAL</b>	<b>2,66,880</b>	<b>2,23,022</b>	<b>1,84,251</b>
<b>Particulars</b>	<b>As at 31-12-2013</b>	<b>As at 31-12-2012</b>	<b>As at 31-12-2011</b>
<b>ASSETS</b>			
Non-current assets			
Fixed assets			
Tangible Assets	95,765	73,108	54,837
Intangible Assets	2,227	2,099	457
Capital Work in Progress	19,422	9,419	8,625
	<b>1,17,414</b>	<b>84,626</b>	<b>63,919</b>
Non-Current Investments	18,485	13,933	11,112
Long Term Loans and Advances	12,787	13,410	12,547
Other Non-Current Assets	8,946	263	471
Current assets	1,57,632	1,12,232	88,049
Current Investments	52,298	47,541	39,956
Inventories	18,407	17,965	14,150
Trade Receivables	14,237	9,376	8,245
Cash and Bank Balances	7,750	24,361	25,085
Short Term Loans and Advances	11,153	7,783	6,836
Other Current Assets	5,403	3,764	1,930
	<b>1,09,248</b>	<b>1,10,790</b>	<b>96,202</b>
<b>TOTAL</b>	<b>2,66,880</b>	<b>2,23,022</b>	<b>1,84,251</b>

## CASH FLOW STATEMENT (in millions)

Particulars	For the year ended 31-12-2013	For the year ended 31-12-2012	For the year ended 31-12-2011
<b>A. Cash flow from Operating Activities:</b>			
Net Profit before Tax	29,910	21,462	31,088
<b>Adjustments for:</b>			
Depreciation and amortisation	18,612	11,384	10,135
Finance cost	1,898	552	250
Interest income	(3,134)	(4,036)	(2,082)
Dividend income	(417)	(699)	(2,111)
Net loss on sale / discarding of fixed assets	331	157	79
Profit on sale of investments (Net)	(4,101)	(2,442)	(571)
Provisions no longer required written back	(472)	(1,091)	(189)
Unrealised foreign exchange (gain)/ loss	1425	556	(20)
<b>Operating Profit before Working Capital changes</b>	<b>44,052</b>	<b>25,843</b>	<b>36,579</b>
<b>Adjustments for changes in Working Capital :</b>			
- Increase/(Decrease) in Trade Payables	6400	7,416	4,720
- Increase/(Decrease) in Short Term Provisions	268	218	104
<b>Particulars</b>	<b>For the year ended 31-12-2013</b>	<b>For the year ended 31-12-2012</b>	<b>For the year ended 31-12-2011</b>
- Increase/(Decrease) in Long Term Provisions	996	1,231	556
- Increase/(Decrease) in Other Current Liabilities	(477)	2000	(45)
- Increase/(Decrease) in Other Long Term Liabilities	70	7	87
- (Increase)/Decrease in Trade Receivables	(3,693)	(1,131)	(1,222)
- (Increase)/Decrease in Inventories	3,485	(3,815)	(2,061)
- (Increase)/Decrease in Loans and Advances	143	(5,115)	(800)
- (Increase)/Decrease in Other Current Assets	(1930)	(1,970)	517
- (Increase)/Decrease in Other Non Current Assets	(139)	119	(353)
<b>Cash generated from Operating Activities</b>	<b>49,175</b>	<b>24,803</b>	<b>38,082</b>
- Taxes (Paid) (Net of Tax Deducted at Source)	(5,333)	(2509)	(9,888)
<b>Net Cash from Operating Activities</b>	<b>43,842</b>	<b>22,294</b>	<b>28,194</b>
<b>B. Cash flow from Investing Activities:</b>			
Purchase of Fixed Assets	(38,549)	(26,392)	(21,511)
Sale of Fixed Assets	449	67	84
Sale of Investments	1,18,332	1,59,780	3,40,722
Purchase of Investments	(1,27,492)	(1,67,598)	(3,19,452)
Interest Received	3,502	4,261	1,476
Dividend Received	417	699	2,111
<b>Particulars</b>	<b>For the year ended 31-12-2013</b>	<b>For the year ended 31-12-2012</b>	<b>For the year ended 31-12-2011</b>
Bank deposits	7600	-	-
<b>Net Cash from Investing Activities</b>	<b>(35,741)</b>	<b>(29,183)</b>	<b>3,430</b>
<b>C. Cash flow from Financing Activities:</b>			
Proceeds from Short Term borrowings	8,413	10,783	312
Repayment of Short Term borrowings	(10,783)	312	(4,015)
Repayment of Long Term borrowings	(2,822)	(1,362)	(1,420)
Interest Paid	(4,510)	(426)	(314)
Dividend Paid	(2,003)	(2,167)	(1,733)
Corporate Dividend Tax Paid	(2,167)	(351)	(351)
<b>Net Cash from Financing Activities</b>	<b>(9,663)</b>	<b>6,165</b>	<b>(7,521)</b>
<b>Net Increase/(Decrease) in Cash &amp; Cash Equivalents</b>	<b>(1,562)</b>	<b>(724)</b>	<b>24,103</b>
<b>Cash and Cash Equivalents as at 1st April (Opening Balance)</b>	<b>2,812</b>	<b>25,085</b>	<b>982</b>
<b>Cash and Cash Equivalents as at 31st March (Closing Balance)</b>	<b>1250</b>	<b>24,361</b>	<b>25,085</b>
<b>Cash and Cash Equivalents</b>	<b>1250</b>	<b>24,361</b>	<b>25,085</b>
Cash & Cheques in Hand	1031	696	862
Balance with Banks	219	65	94
Balance with Scheduled Banks in Deposit Accounts	-	23,600	24,130

## A SURVEY OF DISCRETE IMAGE TRANSFORM METHODS IN IMAGE DATA COMPRESSION

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## ABSTRACT

Compression is the main goal of this work – we aim to represent an image using fewer bits per pixel, without losing the quality after reconstruction of the image. Image transforms are extensively used in image processing and image analysis. Transform is basically a mathematical tool, which allows us to move from one domain to another domain (time domain to the frequency domain). The transformation compact the image information in to a small number of coefficients. If an image is compressed using discrete transforms, it is usually divided into sub-images of 8x8 or 16x16 pixels to speed up calculation, and then each sub-image is transformed and processed separately. The same is true for image reconstruction with each sub-image being reconstructed and placed into the appropriate image position[5]. We present most important discrete transform methods such as Karhunen-Loeve transform (KLT), Discrete Cosine Transform(DCT) and Discrete Wavelet Transform(DWT). We have evaluated the performance of the transform methods using various measures, like computational complexity, parameters to be computer, and quality of image compressed.

## KEYWORDS

Compression, Transformation, Cosine, Wavelet, Filter Bank.

## 1. INTRODUCTION

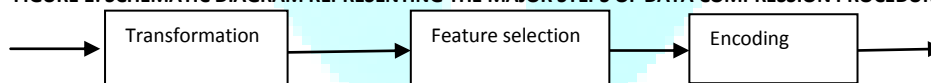
Image compression is an application of data compaction that can reduce the data quantity. We can classify data compaction algorithms into two categories – lossy and lossless compaction. If we apply the lossy compression, then the compacted data will be different from the original data, but large amount of data can be saved. If we apply the lossless compression, then the compacted data will be the same as the original data, but the amount of the reduction of data is limited. In image compression, we also classify the compression methods into lossy and lossless compression. In lossy compression, there is a basic tradeoff between the data rate and the quality.

Image compression algorithms aim to remove redundancy in a data in a way which makes image reconstruction possible, this is sometimes called information preserving compression[5]. It is necessary to find statistical properties of the image to design an appropriate compression transformation of the image; the more correlated the image data are the more data item can be removed.

The major steps of data compression procedure is shown in the figure1[7],

- i) Transformation
- ii) Feature selection, and
- iii) Encoding

FIGURE 1: SCHEMATIC DIAGRAM REPRESENTING THE MAJOR STEPS OF DATA COMPRESSION PROCEDURE



The choice of a particular transforms in a given application depends on the amount of reconstruction error that can be tolerated and the computational resources available [3].

## 2. TRANSFORMATION

## 2.1. INTRODUCTION

The goal of the transformation process is to de-correlate the pixel of each sub-image, or to pack as much information as possible into the smallest number of transform coefficient.

Transformation is a very useful tool in image compression. It is used to transform the image data in time domain to frequency domain. By transforming the data into frequency domain, the spatial redundancies in time domain can be minimized.

The transforms do not change the information content present in the signal (input) and it is to be noted that all the transforms will not give frequency domain information.

Image transform is basically a representation of an image there are two reasons for transforming an image from one representation to another;

- 1) The transformation may isolate critical components of the image patterns so that they are directly accessible or analysis.
- 2) The transformation may place the image data in a more compact form so that they can be stored and transmitted efficiently.

The advantage of using transformations is that the energy of the transformed data is mainly condensed in the low frequency region and is represented by a few transform coefficients. Thus, most of these coefficients can be discarded without significantly affecting the reconstructed image quality.

For efficient compression, the transform should have the following properties;

1. De-correlation – the transform should generate less correlated or uncorrelated transform coefficients to achieve high compression ratio.
2. Linearity – this principle allows one-to-one mapping between pixel values and transform coefficients.
3. Orthogonality – orthogonal transform have the feature of eliminating redundancy in the transformed image.

Transform play a significant role in various image processing applications such as image analysis, image enhancement, image filtering and image compression.

## 2.2 DISCRETE IMAGE TRANSFORMS IN IMAGE DATA COMPRESSION

Image data representation by coefficient of discrete image transform is the basic idea of this approach. The transform coefficients are ordered according to their importance, such that, according to their contribution to the image information content, and the least important coefficient are omitted. Coefficient importance can be judged, for instance, in correspondence to spatial or gray-level visualization abilities of the display; image correlation can then be avoided and data compression may result.

**Karhunen-Loeve Transform**

Karhunen-Loeve Transform, abbreviated KLT, is the most important and optimal transform coding method that can reduce the correlation [8]. Assume one input vector  $\mathbf{X}$  with length  $N \times 1$ , and the correlation can be represented by the autocorrelation matrix  $\mathbf{C}_X$  defined in equation 1.1.

$$\mathbf{C}_X = E[(\mathbf{X} - E[\mathbf{X}])(\mathbf{X} - E[\mathbf{X}])^T]$$

$$= \begin{bmatrix} E[x_0^2] & E[x_0x_1] & \cdots & E[x_0x_{N-1}] \\ E[x_1x_0] & E[x_1^2] & \cdots & E[x_1x_{N-1}] \\ \vdots & \vdots & \ddots & \vdots \\ E[x_{N-1}x_0] & E[x_{N-1}x_1] & \cdots & E[x_{N-1}^2] \end{bmatrix} \quad - 1.1$$

The maximal decorrelation can be achieved if we can diagonalize the matrix 1.1. That is, we must maximize the value of  $E[x_i^2]$  and minimize  $E[x_ix_j]$  by means of transformation, where  $i \neq j$ . We represent the autocorrelation matrix of the output vector  $\mathbf{Y}$  as  $\mathbf{C}_Y$ , which is defined in the equation 1.2.

$$\mathbf{C}_Y = E[(\mathbf{Y} - E[\mathbf{Y}])(\mathbf{Y} - E[\mathbf{Y}])^T] \quad - 1.2$$

We can substitute  $\mathbf{Y}$  with  $\mathbf{AX}$ , so the equation in 1.2 can be expressed as

$$\mathbf{C}_Y = E[(\mathbf{AX} - E[\mathbf{AX}])(\mathbf{AX} - E[\mathbf{AX}])^T] \quad - 1.3$$

Suppose we subtract every elements of  $\mathbf{X}$  from its mean, then the original vector forms a zeros mean sequence. The transformed vector is also a zero mean sequence, so the equations 1.2 and 1.3 can be reduced to equation 1.4

$$\mathbf{C}_Y = E[(\mathbf{AX})(\mathbf{AX})^T] \quad - 1.4$$

After some mathematical manipulation, we can obtain the following relationship between  $\mathbf{C}_Y$  and  $\mathbf{C}_X$  as stated in the equation 1.5.

$$\mathbf{C}_Y = \mathbf{AC}_X\mathbf{A}^T \quad - 1.5$$

We can achieve optimal decorrelation through diagonalization, which means that  $\mathbf{A}$  is composed of the *eigenvectors* of the autocorrelation matrix  $\mathbf{C}_X$ . After transform, the autocorrelation matrix  $\mathbf{C}_Y$  becomes

$$\mathbf{C}_Y = \begin{bmatrix} \lambda_0 & 0 & \cdots & 0 \\ 0 & \lambda_1 & \cdots & 0 \\ \vdots & \vdots & \ddots & \vdots \\ 0 & 0 & \cdots & \lambda_{N-1} \end{bmatrix} \quad - 1.6$$

where  $\lambda_0, \lambda_1, \dots, \lambda_{N-1}$  are the eigenvalues of the correlation matrix.

The largest advantage of KLT is that it can achieve optimal decorrelation [8]. However, it takes large amount of computation to find the eigenvectors for the image to be compressed. On the other hand, the decoder needs all the eigenvectors for decoding the compressed image, so all the eigenvectors must be stored into the bitstream as well as the transform coefficients  $\mathbf{Y}$ . Therefore, KLT is not adopted in the existing image and video compression standards.

**Discrete Cosine Transform**

Discrete Cosine Transform, abbreviated DCT, is an approximation of KLT and widely used in many existing image and video compression standards.

The DCT based encoder can be thought of as essentially compression of a stream of  $8 \times 8$  blocks of image samples. Each  $8 \times 8$  block makes its way through each processing step, and yields output in compressed form into the data stream.

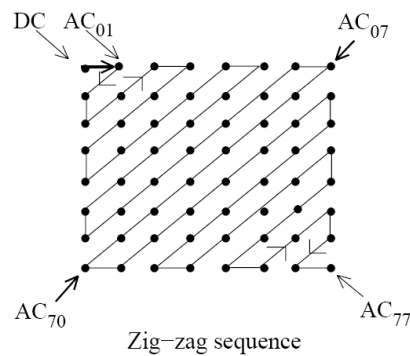
Because adjacent image pixels are highly correlated, the 'forward' DCT (FDCT) processing step shown in equation 2.1, lays the foundation for achieving data compression by concentrating most of the signal in the lower spatial frequencies. For a typical  $8 \times 8$  sample block from a typical source image, most of the spatial frequencies have zero or near-zero amplitude and need not be encoded.

In principle, the DCT introduces no loss to the source image samples; it merely transforms them to a domain in which they can be more efficiently encoded. After output from the DCT, each of the 64 DCT coefficients is uniformly quantized in conjunction with a carefully designed 64-elements quantization table.

At the decoder, the quantized values are multiplied by the corresponding QT elements to recover the original unquantized values. The Inverse DCT processing is shown in the equation 2.2. After quantization, all of the quantized coefficients are ordered into the 'zig-zag' sequence and the same is shown in the Figure2. This ordering helps to facilitate entropy encoding by placing low-frequency non-zero coefficient before high-frequency coefficients. The DCT coefficient, which contains a significant fraction of the total image energy, is differentially encoded.



FIGURE 2: ZIG-ZAG SEQUENCE

**Forward 2-D Discrete Cosine Transform**

$$F(u, v) = \frac{2}{\sqrt{MN}} C(u)C(v) \sum_{x=0}^{N-1} \sum_{y=0}^{N-1} f(x, y) \cos \left[ \frac{\pi(2x+1)u}{2M} \right] \cos \left[ \frac{\pi(2y+1)v}{2N} \right]$$

for  $u = 0, \dots, M-1$  and  $v = 0, \dots, N-1$

$$\text{where } C(k) = \begin{cases} 1/\sqrt{2} & \text{for } k = 0 \\ 1 & \text{otherwise} \end{cases}$$

- 2.1

where  $f(x, y)$  is the element in spatial domain, and  $F(u, v)$  is the DCT coefficient in the frequency domain.

**Inverse 2-D Discrete Cosine Transform**

$$f(x, y) = \frac{2}{\sqrt{MN}} \sum_{u=0}^{N-1} \sum_{v=0}^{N-1} C(u)C(v) F(u, v) \cos \left[ \frac{\pi(2x+1)u}{2M} \right] \cos \left[ \frac{\pi(2y+1)v}{2N} \right]$$

for  $x = 0, \dots, M-1$  and  $y = 0, \dots, N-1$

- 2.2

**Discrete Wavelet Transform**

Wavelet transform [Antomini (1992), Lewis (1992)] is very similar to the conventional Fourier Transform, but it is based on small waves, called wavelet, which is composed of time varying and limited duration waves.

The wavelet transform decomposes an image into a set of different resolution sub-images, corresponding to the various frequency bands. This results in a multi-resolution representation of images with localization in both the spatial and frequency domain.

This is desirable in the case of image compression, but it is not possible in the case of Fourier and Cosine transforms which gives good localization in one-domain at the expense of the other. The main advantage of wavelet based image compression is,

- 1) Wavelets have non-uniform frequency spectra which facilitate multi-scale analysis.
- 2) The multi-resolution property of the wavelet transform can be used to exploit the fact that the response of the human eye is different to high and low frequency components of an image.
- 3) Discrete wavelet transform can be applied to an entire image without imposing block structure as used by the Discrete Cosine transform, thereby reducing blocking artifact.

A discrete wavelet transform can be implemented through either Filter bank scheme or Lifting scheme. In the discrete wavelet transform, an image signal can be analyzed by passing it through an analysis filter bank followed by decimation operation.

Lifting scheme is an efficient implementation of a Wavelet transform algorithm. It is developed to improve wavelet transform and then extended to a generic method to create second generation wavelets. The second generation wavelets are much more flexible and powerful than first generation wavelets.

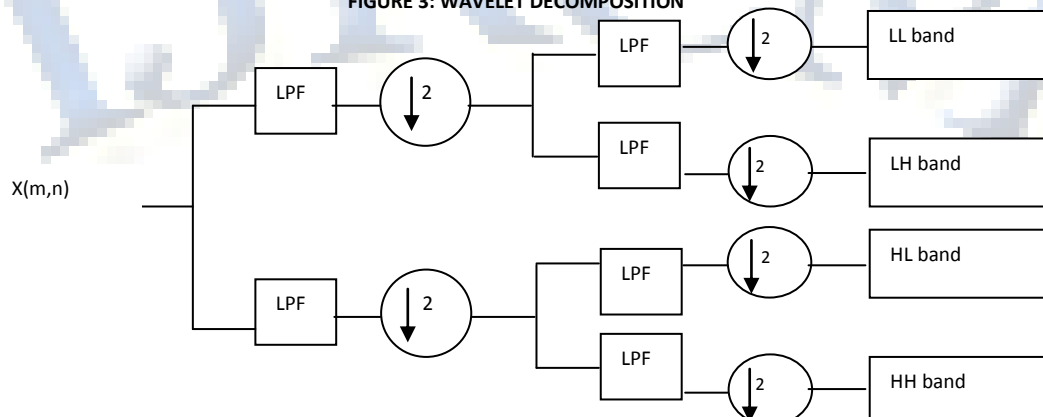
The analysis filter-bank consists of a low-pass and high-pass filters at each decomposition stage. When the input signal passes through these filters, it splits into two bands,

- 1) The Low-pass filter – which corresponds to an averaging operation, extracts the coarse information of the signal.
- 2) The high-pass filter – which corresponds to a differencing operation, extract the detail information of the signal.

The output of the filtering operation is then decimated by two. A two dimension transform is accomplished by performing two separate one dimension transforms.

First, the image is filtered along the row and decimated by two. It is then followed by filtering the sub-image along the column and decimated by two. This operation splits the image into four bands, namely LL, LH, HL, and HH respectively.

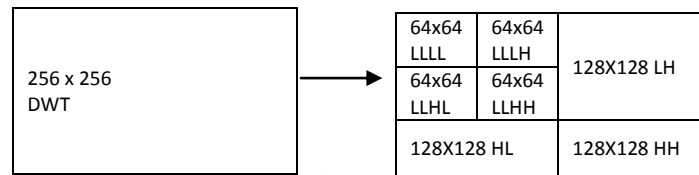
FIGURE 3: WAVELET DECOMPOSITION



Further decomposition can be achieved by acting upon the LL sub-band successively and the resultant image is split into multiple bands. The following figure4 shows the size of the input image and the size of the image at different level of decompositions.

So, after the first level of decomposition we have 4 sub-bands, 7 sub-bands at the second level, 10 at the third level, and son on. One of the most important parameters to decide upon is the number of coefficient should be preserved to compress the image[7].

FIGURE 4: DECOMPOSITION OF INPUT IMAGE WITH SIZE



Sub band coding: Sub band coding is a procedure in which the input signal is sub divided into several frequency bands. Sub band coding can be implemented through "filter bank".

A filter bank is a collection of filters having either a common input or common output. The basic idea in a filter bank is to partition a signal dyadic ally at the frequency domain.

When the filters have a common input, they form an Analysis bank. The analysis filter bank splits the signal into equal frequency bands. When the filters have a common output, they form a Synthesis bank. The synthesis filter bank reconstructs the signal from the two filtered and decimated signals.

Wavelet-based image compression scheme overcomes the problem of blocking artifacts. Wavelet transform is employed in the JPEG 2000 standard.

### 3. RESULTS

Matlab code to perform wavelet decomposition:

```
clc
clear all
a=imread('c:\1_1_1.jpg');
[p q r s]=dwt2(single(a),'db1');
b=[uint8(p),q,r,s];
imshow(b)
```

Result of the Wavelet decomposition:



(Original Image)



(1<sup>st</sup> level decomposition)

Matlab code to compute DCT basis:

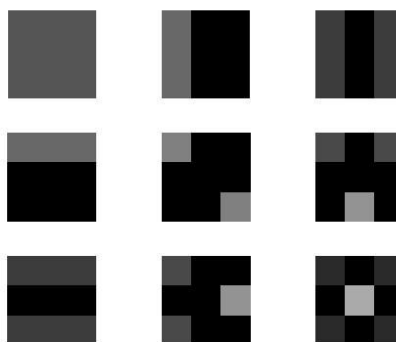
```
clc
clear all
close all
m=input('basis mat dim');
n=m;
a2=ones(1,n)*sqrt(2/n);
a2(1)=sqrt(1/n);
a1=ones(1,m)*sqrt(2/m);
a1(1)=sqrt(1/m);
for u=0:m-1;
    for v=0:n-1
        for x=0:m-1
            for y=0:n-1
                a{u+1,v+1}(x+1,y+1)=a1(u+1)*a2(v+1)*...
                    cos((2*x+1)*u*pi/(2*n))*cos((2*y+1)*v*pi/(2*n));
            end
        end
    end
end
```

```

end
end
mag=a;
figure(3);
k=1;
for i=1:m
for j = 1:n
subplot(m,n,k)
imshow(mag{i,j},256);
k=k+1;
end
end

```

Output for DCT basis n=3



#### 4. CONCLUSION

The image transforms by themselves do not achieve any compression. Instead, they represent the image in a different domain in which the image data is separated into components of varying importance.

To remove correlated image data, the KLT is the most important one. This builds a set of non-correlated variable with decreasing variance.

The variance of a variable is a measure of its information content; therefore, a compression strategy is based on considering only transform variables with high variance, thus representing an image by only the first  $k$  coefficient of the transform.

The KLT is computationally expensive, with a two dimension transform of an  $M \times N$  image having computational complexity  $O(M^2 N^2)$  [5]. It is the only transform that guarantees non-correlated compressed data, and the resulting data compression is optimal in the statistical sense. This makes the transform basis vector image dependent, which also makes this transform difficult to apply for routine image compression. Therefore, the KLT is used mainly as a benchmark to evaluate other transforms.

DCT is real-valued and provides a better approximation of a signal with fewer coefficients. Compared to KLT, the largest difference is that the transform basis of DCT is fixed for all images, so we can save the computational time to find the basis and the storage of it. Although the DCT basis is not adaptive to all images, the decorrelation performance is not far from KLT. Therefore, DCT is a very popular transform method in the past decades.

In DCT the original image is divided into several square blocks before transform. The objective of this process is to segment the image into small blocks with high correlation and reduce the computational cost of DCT. DCT highly suffers by the problem of blocking artifact effect and it can also be regarded as the frequency analysis tool.

Wavelet transform compression technique is lossy compression technique and it is very much similar to that of DCT. However, for a given image quality wavelet transform coding achieves higher compression ratio than that due to DCT. Compression ratio as high as 200:1 may be achieved by this method.

By this survey we find that, for the given (desired) compression ratio (or amount of data reduction), the quality of image compressed by wavelet transform is significantly better than that by DCT. Here, a low-pass filter and a high-pass filter are applied- on the input image along horizontal and vertical directions. Outputs of the filters are sub-sampled by a factor 2. In fact, the blocking effect is much less in the Wavelet Transform because its basic functions overlap one another and decay smoothly to zero at their end points.

Compression is achieved during the quantization of the transformed coefficients not during the transformation step. Quantization is the process of reducing the number of possible values of a quantity, thereby reducing the number of bits needed to represent it. Quantization is basically an irreversible process.

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#### ANALYSIS TOOL USED

10. MATLAB 7.0.1

## USING RADIAL BASIS FUNCTION NETWORKS TO EXAMINE SEMIOTIC THEORIES OF ACCOUNTING ACCRUALS

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### ABSTRACT

Forecasting is an important component in the decision making process, because decisions reflect future events. Furthermore, financial forecasting is an important activity in economic decision-making. Since the cash flows are a basis for payment of dividends, interest and debt repayment and so on, users need to forecast future cash flows. In this paper, utility of accounting accruals in predicting future cash flows were investigated using the semiotics theory in Iranian companies. To this end, 60 firms were selected on the Tehran Stock Exchange and their financial information were analyzed by a valid method that called Radial Basis Function (RBF for the first time) in Iran. The evidence indicate that accounting accruals (that based on performance can be divided into two categories: syntactic and semantic accounting accruals) have information value. Furthermore, they are effective in predicting future operating cash flows. Accounting accruals also improve predicting of future operating cash flows when added to cash item.

### KEYWORDS

Operation cash flows, Semiotic theories of accounting accruals, Syntactic accounting accruals, Semantic accounting accruals, Radial Basis Function (RBF) Networks.

### INTRODUCTION

In today's world, accounting was not very successful without the theoretical framework and foundations. Accounting theory is a logical reasoning system that provides a framework for building universal principles. These principles used to evaluate the procedure of accounting and they are also guidelines for the development of new methods in accounting (Ghaemi, 1996). Theory in its broad sense means to describe and predict a phenomenon. In fact, the theory finds a correlation between past events that can be extended to future or to predict unobserved events (Pur Azarsa, 1985).

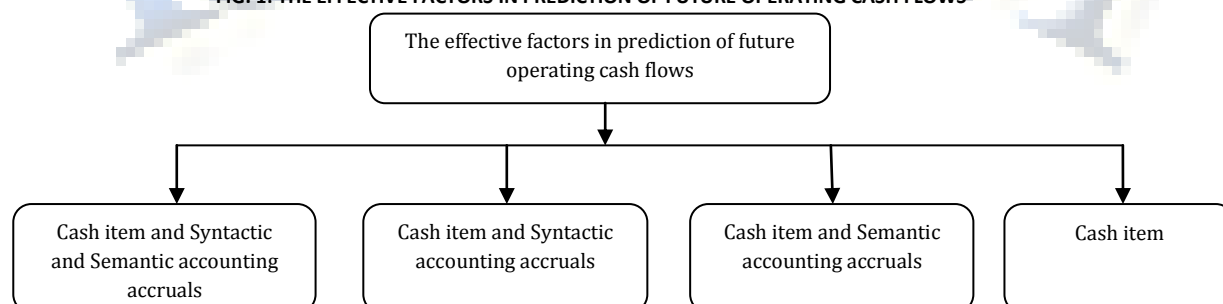
Semiotic theory of accounting accruals is one of theories that do to the focus on accounting reporting aspect has critical importance. This theory looks at the accounting from the standpoint of linguistics. Two basic theories of semiotics theory are:

- 1) Theory of the functions of accounting accruals: This theory classifies accounting accruals based on their performance and expresses that there are two main types of accruals: semantic accounting accruals and syntactic accounting accruals.
- 2) Theory of the pragmatic information of accounting accruals: This theory explains why accruals accounting have information value (information content) and it also states that semantic and syntactic accounting accruals have information content because they improve prediction of future cash flows when add to cash item.

Since accounting can be considered as a kind of language, aspects of reporting accounting should be part of the evolution of accounting. Theories that describe the process of reporting should be improving the meaning of accounting reporting and their components (Etheridge and Hsu, 2004).

Accrual accounting is one of component of accounting reporting that we can examine it by reporting theory. Semiotic theory of accounting accrual has been noticeable for Researchers in recent decades. On one hand, these signs offer the current status of firm's perspective and the other hand, they allowing users to make more accurate predictions of the future status, especially for predicting of future cash flows. However the accrual accounting reduce scheduling problems and inconsistencies inherent in the cash figures, but usefulness and reliability of accruals accounting are dubitable. Due to considering the estimative and subjective nature of these items managers can be manipulate them to adjust the reported earnings that prepare by accepted accounting principles. Hence, despite the consensus about the usefulness of accounting accruals in forecasting and decision making, there are some dissidents among experts (Arabmazar et al, 2006). Therefore, this study examined the objective and usefulness of accounting accruals by semiotic, theory of signs and symptoms, with a valid method that called Radial Basis Function Networks. The theoretical foundations performed by researchers indicate that accounting accruals have information content (e.g. the relationship between accruals and return on equity (Seifi, 2006), the role of accruals and cash flows in the valuation (Ali Ahmadi, 2005), examining the relationship between profitability current cash flow and accounting accruals with future operation cash flows (Taheri, 2005). Figure 1 shows Effective factors in prediction of future operating cash flows.

**FIG. 1: THE EFFECTIVE FACTORS IN PREDICTION OF FUTURE OPERATING CASH FLOWS**



In the following are expressed literature review, hypotheses and methods of research, and finally findings of research and conclusions are presented.

## LITERATURE REVIEW

Barth et al (2001) in a study entitled "accruals and prediction of future cash flow" examined the relationship between operating cash flow and accrual components of earnings using multivariate regression models. The results showed that the accounting accrual component of earnings increases predictability of future cash flows, markedly. Etheridge and Hsu (2004) in a research entitled "using artificial neural networks to examine semiotic theories of accounting accruals" examined the theory of semiotics accruals. In this study the theory of pragmatic information of accounting accruals and theory of the functions of accounting accruals were presented. As well as researchers used an artificial neural network. They predicted future cash flows using the cash item and cash item with accounting accrual. They found error rate of prediction is reduced by adding accounting accruals to the cash item. Thus it can be expressed that the accounting accruals have information content.

Saghafi (2006) in his research presented an efficient model for predicting of cash flow for companies that listed in Tehran Stock Exchange. He compared his model with other models. Based on the results, models that use cash item have higher error rate compared to models that using accounting accruals. Khajavi and Nazemi (2006) in their studies Investigated financial statements of 96 companies during the period 1998 to 2003. Their results showed that average stock returns do not affect on the accrual accounting amounts and related components. In other words, there is not a significant difference in average of return of companies with the lowest and the highest figure of accounting accruals.

Arab Mazar Yazdi et al (2006) have investigated the information value of accounting accruals and cash flows in capital market of Iran. The results show that earnings have higher information content than operating cash flows. On the other hand, other researches in this area implies the increasing information content of accounting accruals compared to the operating cash flows.

Bracket et al (2007) concluded that the average absolute prediction errors for future cash flows when accruals are added as a predictor of operating cash flows, is smaller than when the cash flows from operations are used alone as a predictor.

Hashemi et al (2010) in a study evaluated capability of cash and accrual components of earnings in prediction of abnormal earnings and valuation of the companies listed on the Stock Exchange. The results show that cash flows and total accounting accruals affect on the value of the companies and prediction of abnormal earning. Another result of this study shows that the component of accounting accrual can forecast abnormal earnings, although only some of the coefficients of accounting accruals component are statistically significant.

## RESEARCH HYPOTHESES

Based on the theoretical foundations this study is to investigate the effect of accounting accruals on predicting of future cash flows. It will answer the question whether accounting accruals improves prediction of future cash flow or not. Therefore, the following hypotheses have been developed to answer these questions:

Hypothesis 1: Adding up of syntactic accruals to cash items can improve prediction of future operating cash flows.

Hypothesis 2: Adding up of semantic accruals to cash items can improve prediction of future operating cash flows.

Hypothesis 3: Adding up of syntactic and semantic accruals together to cash items can improve prediction of future operating cash flows.

Hypothesis 4: Syntactic and semantic accruals equally improve prediction of future operating cash flows.

## SAMPLE SELECTION AND DATA COLLECTION

Sample of this research consists of listed companies on the Stock Exchange. Due to the vast volume of sample, the under following conditions were considered for selection of sample:

1. The company should be listed on Tehran Stock Exchange from the beginning of 2007 financial year.
  2. The every financial year of the company should end in March.
  3. The company should not change the financial year from 2009 to 2011.
  4. The company should not be a financial trading company or an investment company.
  5. Consistency should be observed during the studied period during 2007 to 2009.
  6. Operating cash flows, accounting accrual components of earnings and balance sheet data should be available for entire period under examination.
- Among the companies listed on Tehran Exchange that have all of the above conditions, 60 companies were selected during 2009 to 2011.

## VARIABLE OF RESEARCH

Independent variables are:

- 1 - Cash Items,
- 2 - Cash Items with syntactic accounting accruals items,
- 3 - Cash items with semantic accounting accruals items,
- 4 - Cash Items with syntactic and semantic accounting accruals items,

Dependent variable in this research is the annual operating cash flow of future.

## RESEARCH METHODOLOGY

Artificial neural networks are models for information processing that built by mimic from biological neural networks, like a human brain. The Key element of these patterns is a new structure for data processing system. Artificial neural networks with processing on the experimental data are extracted knowledge or hidden lows beyond the data and transferred it to the network structure. These processes are called Learning. Essentially the most important feature of an intelligent system is learning ability.

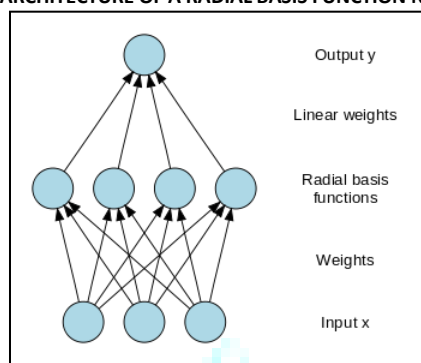
The learner systems are more flexible and planned simply, so they can be held accountable on new issues and equations. Firstly, this research was used artificial intelligence techniques (Radial Basis Function Networks) in order to organize the relationship between dependent and independent variables and forecasting future operating cash flow. Network was trained in 2009 by operating cash item and tested by data in 2010 for each of the independent variables. In the end, the designed network was predicted future operating cash flow by four independent variables.

## RADIAL BASIS FUNCTION NETWORKS

Networks with radial based function widely used to estimate the non-parametric multi-dimensional functions through a limited set of training data. Due to the rapid and widespread training of radial neural network, they are extremely interesting and useful. Radial basis functions (RBF) networks have been introduced by Broomhead and Lowe (1998). It is one of the leading networks with three layers: an input layer, a hidden layer with a non-linear RBF activation function and a linear output layer (see Fig.2).



FIG. 2: ARCHITECTURE OF A RADIAL BASIS FUNCTION NETWORK



(Broomhead &amp; Lowe, 1998).

The input modeled as a vector of real numbers  $\mathbf{x} \in \mathbb{R}^n$  and then output of the network is a scalar function of the input vector,  $\varphi : \mathbb{R}^n \rightarrow \mathbb{R}$ , and is calculated by

$$\varphi(\mathbf{x}) = \sum_{i=1}^N a_i \rho(\|\mathbf{x} - \mathbf{c}_i\|)$$

In this equation  $N$  is the number of neurons in the hidden layer and  $\mathbf{c}_i$  is the center vector for neuron  $i$ , and  $a_i$  is the weight of neuron  $i$  in the linear output neuron. Functions that depend only on the distance from a center vector are radially symmetric about that vector, hence the reason this is called radial basis function. In the basic state all inputs are attached to each hidden neuron. The norm is frequently taken to be the Euclidean distance and the radial basis function is typically taken to be Gaussian

$$\rho(\|\mathbf{x} - \mathbf{c}_i\|) = \exp[-\beta \|\mathbf{x} - \mathbf{c}_i\|^2]$$

The Gaussian basis functions are local to the center vector in the event that

$$\lim_{\|\mathbf{x}\| \rightarrow \infty} \rho(\|\mathbf{x} - \mathbf{c}_i\|) = 0$$

By having certain mild conditions on the figure of the activation function, RBF networks are universal approximators on a compact subset of  $\mathbb{R}^n$  (Park & Sandberg, 1991). This means that an RBF network with enough hidden neurons can approximate any continuous function with arbitrary precision. The parameters  $a_i$ ,  $\mathbf{c}_i$ , and  $\beta_i$  are defined in a manner that optimizes the fit between  $\varphi$  and the data (Broomhead and Lowe, 1998).

### DESIGN AND IMPLEMENTATION OF RBF NETWORKS

After data collection, the data were cleaned and prepared. It means that absent, incomplete or not calculable data are removed. After normalizing, the data are divided into two categories: learning and test. Network builds model by learning data and assessment model with test data. The results of the models related to the first, second and third hypotheses are presented in Tables 1, 2 and 3.

TABLE 1: PREDICTIVE ACCURACIES (%) OF RBF NETWORK BY ADDING UP OF SYNTACTIC ACCRUALS TO CASH ITEMS

	Accuracy	The correlation coefficient	Error type I	Error type II
Result of learning data	99.8925	0.9876	0.0328	0.0011
Result of test data	99.5097	0.9981	0.0700	0.0049
Result of all data	99.7777	0.9860	0.0472	0.0022

TABLE 2: PREDICTIVE ACCURACIES (%) OF RBF NETWORK BY ADDING UP OF SEMANTIC ACCRUALS TO CASH ITEMS

	Accuracy	The correlation coefficient	Error type I	Error type II
Result of learning data	99.9477	-0.0035	0.0229	0.0005
Result of test data	99.9495	0.4211	0.0225	0.0005
Result of all data	99.9482	0.99511	0.0228	0.0005

TABLE 3: PREDICTIVE ACCURACIES (%) OF RBF NETWORK BY ADDING UP OF SYNTACTIC AND SEMANTIC ACCRUALS TOGETHER TO CASH ITEMS

	Accuracy	The correlation coefficient	Error type I	Error type II
Result of learning data	99.9723	0.99593	0.0167	0.0003
Result of test data	98.9536	0.9804	0.1022	0.0105
Result of all data	99.6667	0.97577	0.0577	0.0033

### DATA ANALYSIS

In this section the observations of standard error will be described and evaluated in different situations.

TABLE 4: DESCRIPTIVE STATISTICS FOR THE OBSERVATION

Descriptive criteria	Total	Average	Minimum	Maximum	Standard deviation	Skewness coefficient
Error Metric of prediction of future operating cash flow considering cash items	60	546/1	011/0	263/44	789/5	085/7
Error Metric of prediction of future operating cash flow considering cash items and syntactic accruals	60	466/1	010/0	887/66	598/8	719/7
Error Metric of prediction of future operating cash flow considering cash items and semantic accruals	60	375/0	004/0	010/6	823/0	832/5
Error Metric of prediction of future operating cash flow considering cash items and syntactic and semantic accruals	60	216/0	002/0	220/1	263/0	534/2



The results in table 4 show that the highest average standard error of prediction occurs when no accruals have been added to it. So adding syntactic and semantic accounting accruals decreases the average standard error of prediction. In the first column of the above table represent the number 60 that implies there is no missing observation. Skewness coefficient in the last column indicates that none of the standard error  $s$  has not normally distributed. As well as, normality assumption is examined in more in detail.

The hypothesis tested in this study by SPSS and MATLAB software. Average standard errors were calculated based on each of the independent variables. For determining the appropriate test methods in inferential statistics basic assumption is normality of the observations that we have collected. This work was performed by Kolmogorov-Smirnov test. Since the observations weren't normal, we used nonparametric statistical methods specifically Wilcoxon test. Also the correlation coefficient was used to endorsing the result.

in this section to assess the impact of cash item, cash item and syntactic accounting accruals, cash item and semantic accounting accruals and cash item and semantic and syntactic accounting accruals on predicting of operating cash flows the test Kolmogorov - Smirnov done. Since all four cases in the Table 6, the significance level is less than **0.05** ( $P < 0.05$ ) the normality assumption will be rejected in all cases.

TABLE 5: ONE-SAMPLE KOLMOGOROV- SMIRNOV TEST

Normality test	Error Metric related to adding syntactic accruals to cash items	Error Metric related to adding semantic accruals to cash items	Error Metric related to adding syntactic and semantic accruals to cash items	Error Metric associated with considering only
Mean	<b>0.0094</b>	<b>0.0061</b>	<b>0.0085</b>	<b>0.0041</b>
Standard Deviation	<b>0.0228</b>	<b>0.01321</b>	<b>0.02334</b>	<b>0.01058</b>
Z	<b>1.642</b>	<b>1.597</b>	<b>1.514</b>	<b>1.507</b>
p- value	<b>0.009</b>	<b>0.012</b>	<b>0.02</b>	<b>0.021</b>

Due to observations weren't normal, we used to Wilcoxon test at the 5% level that is a non-parametric test. Furthermore, the results of RBF network were tested by Wilcoxon test.

#### THE FIRST HYPOTHESIS TEST

According to table 1, it is seen that the correlation coefficient of 0.986 and this figure is closer to 1. It means that syntactic accounting accruals have a direct and perfect relationship with operating cash flow and adding up of syntactic accruals to cash items can improve prediction of future operating.

TABLE 6: WILCOXON TEST FOR DIFFERENCES OF ERROR METRIC OF THE PREDICTION OF OPERATING CASH FLOW IN TWO MODES (CONSIDERING ONLY CASH ITEM-CONSIDERING CASH ITEMS ADDED WITH SYNTACTIC ACCRUALS)

Test Statistics <sup>b</sup>	<sup>a</sup> -2.711
Asymp. Sig. (2- tailed)	0.007
a. Based on positive ranks.	
b. Wilcoxon Signed Ranks Test	

Also Wilcoxon test results in table 6 show that significant level is 0.007 and less than 0.05 ( $P < 0.05$ ), therefore, with the probability of 95%, we conclude that there is a significant difference between the Error Metric of the prediction of operating cash flow in only cash items and cash items added with syntactic accruals. Therefore the first hypothesis is accepted at level 0.05%.

#### THE SECOND HYPOTHESIS TEST

According to table 2, it is seen that the correlation coefficient of 0.9994 and this figure is closer to 1. It means that semantic accounting accruals have a direct and perfect relationship with operating cash flow and adding up of semantic accruals to cash items can improve prediction of future operating.

TABLE 7: WILCOXON TEST FOR DIFFERENCES OF ERROR METRIC OF THE PREDICTION OF OPERATING CASH FLOW IN TWO MODES (CONSIDERING ONLY CASH ITEM-CONSIDERING CASH ITEMS ADDED WITH SEMANTIC ACCRUALS)

Test Statistics <sup>b</sup>	<sup>a</sup> -2195
Asymp. Sig. (2- tailed)	0.028
a. Based on positive ranks.	
b. Wilcoxon Signed Ranks Test	

Wilcoxon test results in table 7 indicate that significant level is 0.028 and less than 0.05 ( $P < 0.05$ ), therefore, with the probability of 95%, we conclude that there is a significant difference between the Error Metric of the prediction of operating cash flow in only cash items and cash items added with semantic accruals. Therefore the first hypothesis is accepted at level 0.05%.

#### THE THIRD HYPOTHESIS TEST

According to table 3, it is seen that the correlation coefficient of 0.9994 and this figure is closer to 1. It means that semantic accounting accruals have a direct and perfect relationship with operating cash flow and adding up of semantic and syntactic accruals to cash items can improve prediction of future operating.

TABLE 8: WILCOXON TEST FOR DIFFERENCES OF ERROR METRIC OF THE PREDICTION OF OPERATING CASH FLOW IN TWO MODES (CONSIDERING ONLY CASH ITEM-CONSIDERING CASH ITEMS ADDED WITH SEMANTIC AND SYNTACTIC ACCRUALS)

Test Statistics <sup>b</sup>	<sup>a</sup> -1.420
Asymp. Sig. (2- tailed)	0.004
a. Based on positive ranks.	
b. Wilcoxon Signed Ranks Test	

Wilcoxon test results in table 8 show that significant level is 0.004 and less than 0.05 ( $P < 0.05$ ), therefore, with the probability of 95%, we conclude that there is a significant difference between the Error Metric of the prediction of operating cash flow in only cash items and cash items added with semantic and syntactic accruals. Therefore the first hypothesis is accepted at level 0.05%.

#### THE FORTH HYPOTHESIS TEST

For the fourth hypothesis, we should compare the results of first and second hypothesis. If ratio of division of MSE and RMSE of hypothesis be less than 1, efficiency of a hypothesis to another hypothesis is accepted. Therefore, Based on the results in Table 9, adding up semantic accounting accruals item cash items in prediction of operation cash flow is much more improvement than adding up syntactic accounting accruals item. Therefore syntactic and semantic accruals don't improve prediction of future operating cash flows equally and forth hypothesis is rejected.

TABLE 9: THE RESULTS OF COMPARISON OF HYPOTHESES

hypothesis	items	Division MSE	Division RMSE
1	Cash items/ syntactic accruals+ cash items	1.2774	1.1307
2	Cash items/ semantic accruals+ cash items	0.2975	0.5454
3	Cash items/ syntactic and semantic accruals+ cash items	1.91442	1.3837

**CONCLUSION**

This study examines the role of information content of accounting accruals. In this regard, four hypotheses were proposed. After normalization of data, four models were presented by Radial Basis Function networks for every hypothesis. Results show that syntactic and semantic accounting accruals have information content in prediction of future operation cash flows and as a result, first, second and third hypotheses is accepted. Furthermore, syntactic and semantic accruals don't improve prediction of future operating cash flows equally and this leads to the fourth hypotheses is rejected.

**RECOMMENDATIONS FOR FURTHER RESEARCH**

Research findings showed that semiotic theory of accounting accruals can be used to predict future operating cash flows and it can provide useful information for users (managers, investors, creditor and so on). Therefore, we propose the following research for future:

1. Dividing of accounting accruals items into its components and then comparing of the results for finding that which component have better prediction of future operating cash flow.
2. Separation of firms according to their industry and its effect on different industry.
3. Comparison of cash item and accounting accrual data to predict future cash flows using the quarterly financial information.
4. Predict operating cash flows in companies such as investment firms, insurance and banking using cash and accounting accrual data.
5. Predict cash flows using stock market and investment information.

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## CLOUD COMPUTING SYSTEM

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**ABSTRACT**

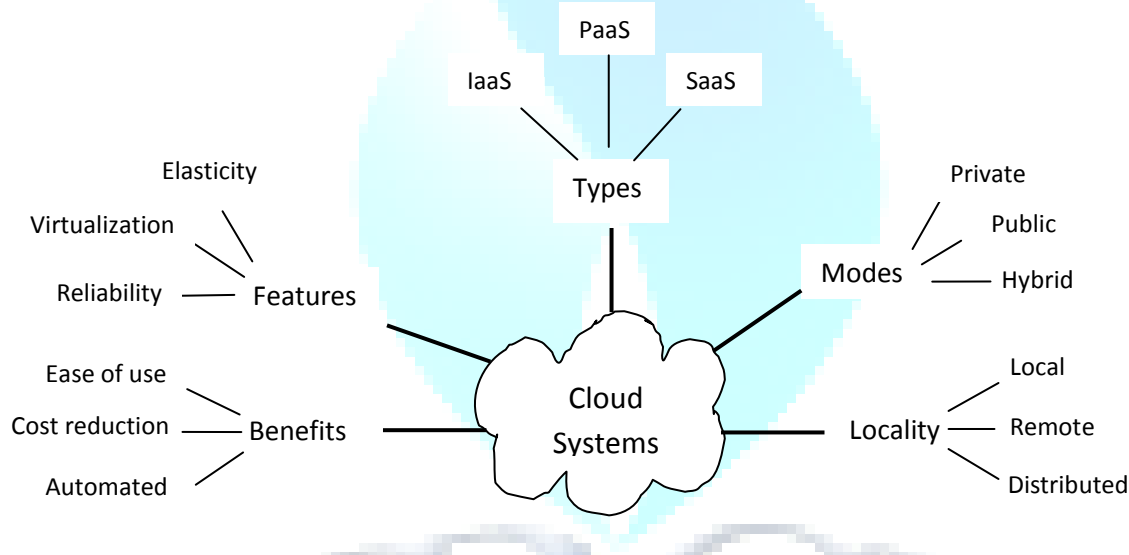
Cloud Computing is the benign way of providing Internet services and computers. Internet, Grid Computing and Web Services are such existing services on which this technology is based. This paper delves into the future perspectives in cloud computing, points out some issues of the cloud computing paradigm. It is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources that can be swiftly rendered and released with minimal management efforts or service provider interaction. No doubt cloud computing offers vast opportunities to the IT sector, but the development of cloud computing technology is still in its earlier period, with many issues still to be addressed. It is distinguished by the notion that resources are virtual and limitless and that details of the physical systems on which software runs are abstracted from the users. The term "cloud computing" is relatively new, there is no universal agreement on this definition. This paper aims at present the future perspectives of cloud computing. It is a modality for providing computer facilities via the internet where the adjective cloud reflects the diagrammatic use of a cloud as a metaphor for the internet.

**KEYWORDS**

Cloud Computing, Virtualization, utility computing, cloud platform

**INTRODUCTION**

Cloud computing is a style of computing in which such resources are provided to internet which are virtualized and dynamically scalable. We are dwelling in the era which sees rapid development in processing and storage technologies and the success of internet. Computing resources are becoming cheaper and more ubiquitously than even before. The term cloud computing is fetched out metaphorically when some of the analysts such as Buyya and Forester see the cloud computing system as modified virtualized volumes available on internet.

**FIGURE 1: MAIN ASPECTS OF CLOUD COMPUTING SYSTEM**

A cloud is an elastic execution environment of resources involving multiple stakeholders and providing a metered service at multiple granularities for a specified level of quality. Cloud computing, "the next natural step in the evolution of on-demand information technology services and products" is described as a computer model that alters swift and enables with marginal effort the access, which is assembled on demand, to a common storage computing resource from a network.

*"It is very difficult to give prediction about the uncertain and fluid future of the environment surrounding Cloud Computing – be it technology, its adoption structure, industry, regulatory regime."*

Niels Bohr (Noble Prize in Physics : 1922)

A key element of a successful information technology is its ability to become a valuable contributor to cyber infrastructure. The main idea behind cloud computing is not a new one. Utility computing involves organizing and providing a wide range of computing – related services as public utilities. John McCarthy in the 1960s already envisioned that computing facilities will be provided to the general public like a utility<sup>[1]</sup>. The reason behind the mingling of different concepts in cloud computing is that it is not a new technology, but rather a new paradigm congregating a set of recent technologies. Cloud computing is often compared to the following techniques which sharing concepts with it: -

- **Grid Computing** – The grid concept has a complementary but independent relationship to the concept of cloud computing. The similarities are that both aim to provide access to large computing or storage resources. Cloud computing can benefit from grid concepts by integrating standard interfaces, federation access control and distributed resource sharing.
- **Virtualization** – Cloud computing virtualizes systems by pooling and sharing resources. It refers to the rendering of virtual computing environment created through a software facility with the capability of managing several diverse computing platforms. It always enhances the working of services. It makes possible the performing of data with high density.

- *Utility Computing* – Computing as a utility is a dream that dates from the beginning from the computing industry. A general reference of utility computing is hosting where in an application server provides computer services on a subscription basis. A set of new technologies has come along with the need for more efficient and affordable.

### CLOUD COMPUTING CHARACTERISTICS

Cloud computing is an evolutionary modification that makes a drastic new approach to how computing services are modified. Using of cloud service provider means leasing part of a huge infrastructure of datacenters, computers, storage and network capacity. There is certain difference between traditional and cloud computing. As shown in *Figure 2* at present local software is installed and data is stored on most personal computers. Most computer users in organizations also access enterprise applications, data storage and processing power from a corporate data centre. The internet may additionally be used and often relied upon. *Figure 3* shows the new stream of cloud computing where software applications and data are no longer installed and stored on a user's computing device. Enterprise and personal applications, data storage and remote processing power are all accessed from the cloud. Both figures indicate the two most extreme positions, with a hybrid model somewhere in between being most likely in the medium-term. Even so, the implications of ceasing to install all applications and store all data on personal computers or in a data centre will be very significant <sup>[2]</sup>.

FIGURE 2 – TRADITIONAL COMPUTING MODEL

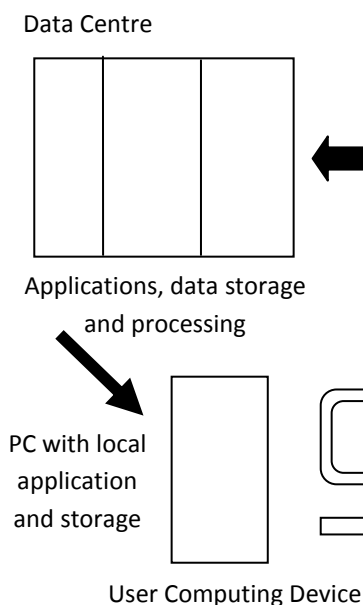
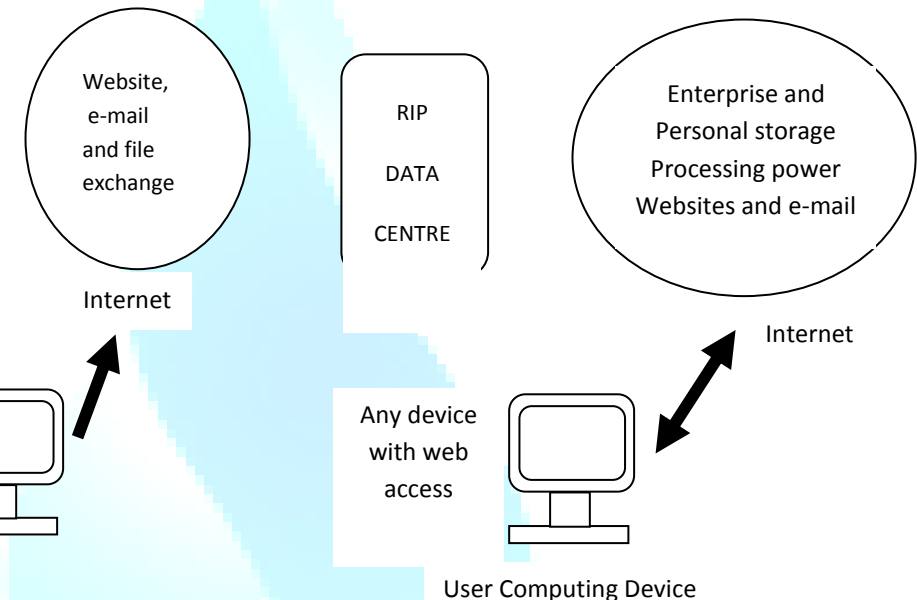


FIGURE 3 – CLOUD COMPUTING MODEL



### DYNAMICALLY SCALABLE

Cloud computing is dynamically scalable because users only ever have to devour the amount that they actually want. The cloud computing service can scale capacity up or down rapidly as the consumer demands at the speed of full automation, taking advantage of the elasticity of shared pools of resources. Such services appear to be unlimited in scale and can be purchased and provisioned as needed <sup>[3]</sup>.

### TASK CENTRIC

Cloud computing is task centric as the model which implemented for usage is dependent on the desired requirement of the user not on the infrastructure of any particular software, hardware or network. Instead of focusing on the application and what it can do, the focus is on what you need done and how the application can do it for you <sup>[4]</sup>. Cloud computing resources can be accessed from any system on the internet. Device independency will be of increasing importance as more and more people are access internet using several smart devices.

### CLOUD COMPUTING ARCHITECTURE

Cloud computing is the natural extension of many of the designs and principles and it relies on a set of protocols needed to manage interprocess communications that have been developed over the last two decades. The cloud computing architecture can be divided into four layers : hardware or datacenter layer, infrastructure layer, platform layer and the application layer.

- *Hardware layer* – Physical resources of the cloud are managed by the hardware layer. It generally considers as server layer. It represents the physical hardware providing real resources for the making of cloud.
- *Infrastructure layer* – This layer is also known as the virtualization layer, the infrastructure layer creates a pool of storage and computing resources by partitioning the physical resources using virtualization technique.
- *Platform layer* – This layer, consists of operating systems and application frameworks, is built on the top of the infrastructure layer. It lessens the burden of deploying applications.
- *Application layer* – The application layer stays on the highest level and consists of the actual cloud application. In this layer applications are run and congregated with a web browser.

### CLOUD TYPES

Cloud computing applications are being described as being composed of a set of layers or service types upon which distributed applications may be built or hosted. Service types are models upon which distributed applications are created and hosted.

## SERVICE MODELS

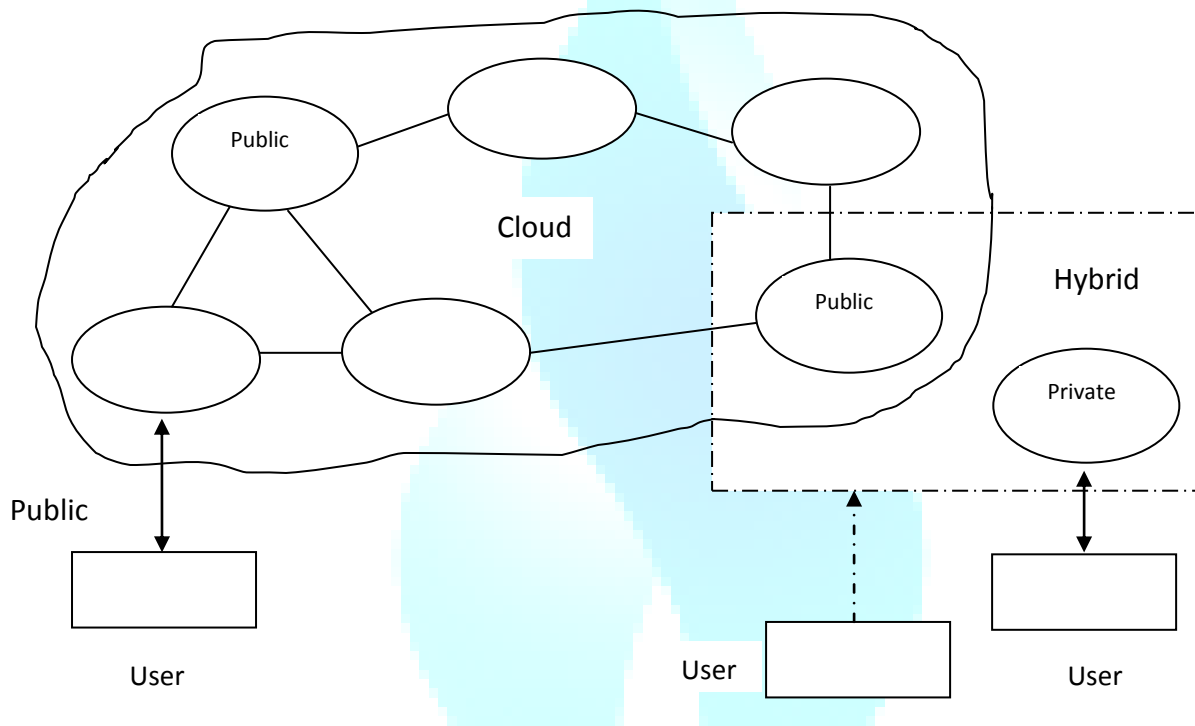
For cloud computing we generally define three major layers – the *cloud infrastructure* commonly known as Infrastructure as a Service, *cloud application platform* known as Platform as a service and *cloud application* known as Software as a Service –moving from the most foundational to the top.

- *IaaS* – Infrastructure as a Service is the foundation of cloud computing. IaaS provides virtual machine, virtual storage and virtual infrastructure and other hardware assets as resources that client can provision. This type of cloud computing provides the basic elements for IT industry. Most large IaaS providers rely on virtual machine technology to deliver servers that can run applications.
- *PaaS* – Platform as a Service is a category of cloud computing that provides a platform and environment to allow developers to build applications and services over the internet. Platform in the cloud is a software layer that is used to create higher levels of services. PaaS provides virtual machines, operating systems, applications, services, development frameworks, transactions and control structures.
- *SaaS* – Software as a Service is a software delivery method that provides access to software and its function remotely as a web based service. This term is used to describe a storage model where a business or organization rents or leases storage space from a third party provider<sup>[5]</sup>. SaaS is a complete operating environment with applications, management and the user interface.

## DEPLOYMENT MODELS

Cloud deployment models are critical aspects of the cloud computing paradigm. There are three types of cloud computing – Public Cloud, Private Cloud and Hybrid Cloud.

FIGURE 4 : THREE TYPES OF CLOUD COMPUTING



- *Public Cloud* - In the public cloud or external cloud computing resources are dynamically provisioned over the internet via web applications or web services from an off-side third party provider. It is made available to the general public or a large industry group.
- *Private Cloud* - Private cloud or internal cloud refers to cloud computing on private networks. They are built for the exclusive use of one client, providing full control over data, security and quality of service. It is operated solely for an organization.
- *Community Cloud* – The cloud infrastructure is shared by several organizations and supports a specific community that has shared concerns. It may be managed by the organizations or a third party and may exist on premise or off premise<sup>[6]</sup>.
- *Hybrid Cloud* - A hybrid cloud environment combines multiple public and private cloud models. It defines the complexity of determining how to distribute applications across both a public and private cloud. Figure 4 elaborately defines the structure of all the types of clouds.

## RECENT TRENDS & FUTURE PROSPECTS

The increasing of computing resources led to a higher demand of cloud systems making this concept becoming one of the topic research themes. Keeping a check on the beneficency of the utilization of cloud computing is an issue that will arise interest for what lies ahead in this field.

## DISTRIBUTED FILE SYSTEM

Google developed the patented distributed file system Google File System (GFS) providing efficient and reliable access to data using large clusters of commodity servers. GFS shares many of the same goals as previous distributed file systems such as performance, scalability, reliability and availability. Its design has been driven by key observation of application workloads and technological environment, both current and anticipated, which reflect a marked departure from some earlier file system design assumptions<sup>[7]</sup>. Files are divided into chunks of 64 megabytes, and are usually appended to or read and only extremely rarely overwritten or shrunk.

## MAPREDUCE

MapReduce refers to a group of programming techniques in which data is processed in sets. Built on top of Google File System, Google's MapReduce framework is the heart of the computational model for their approach to cloud computing<sup>[8]</sup>. The main concept behind the computational model of Google is that the program code which is written by the software developer contains two different functions *map* and *reduce* to process a collection of data.

## ARCHITECTURE DESIGN OF DATA CENTERS

Traditional data centers have had a relatively high degree of customization, with particular servers, mainframes, and so forth requiring careful planning. A data centre, which is home to the computation power and storage, is central to cloud computing and contains thousands of servers, switches and routers. Data centers will continue to exist, though over time the private clouds will increasingly resemble their public counterparts.

## THREATS & RESEARCH CHALLENGES

Perhaps the biggest threat that emerges when a technology gains sufficient interest from enough people is that it will begin to be observed as panacea. Cloud computing vendors run very reliable networks. In the cloud, it is common to have various resources, such as machine instances, fail. Except for tightly managed Platform as a Service cloud providers, the burden of resource management is still in the hands of the user is often provided with limited or immature management tools to address these issues<sup>[9]</sup>. Even though cloud computing has been widely used in industries; its research is still in early stage. Consequently, cloud services must be designed under assumption that they will experience frequent and open unpredictable failures. Services must recover from failures autonomously, and this implies that cloud computing platforms must offer standard, simple and fast recovery procedures<sup>[10]</sup>.

## CONCLUSION

We have gone through a number of genres to cloud computing and pointed out all its aspects. Cloud Computing has recently emerged stimulating paradigm of managing services over the internet. It's rising rapidly changing the genre of information technology. It's true that current technology is not mature enough to cognize its full potentials. Extending this system should be the main concern of the service suppliers. It holds a considerable promise as a transformative technology that can change the very nature of computing specifically to business enterprise. To sum up, we can say that research and development related to cloud computing technologies forms a virtual part of the future of the internet. On the basis of ongoing research efforts and continuing advancements of computing technology, we believe that this technology hovered to have a major impact on scientific endeavors of society.

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**'BANK ON WHEELS' FOR FINANCIAL INCLUSION: A CASE STUDY****DIVYA PRABHU P****ASST. PROFESSOR****DEPARTMENT OF BUSINESS ADMINISTRATION****SAHYADRI COLLEGE OF ENGINEERING & MANAGEMENT****MANGALORE****ABSTRACT**

Indian economy is a rural economy. The demographic features of rural India comprise more of population that is ignorant of utilizing even basic financial services. Access to safe, easy and affordable credit and financial services by the poor and vulnerable groups, disadvantages areas and lagging sector is recognized as a precondition for accelerating growth and reducing income disparities and poverty. Financial inclusion is the need of the hour. Banking sector, especially the co-operative sector has played a very significant role in the development of Indian economy. The SCDCC Bank Ltd basically fulfills the financial needs of rural population in particular. Taking cue from the history of Royal Bank of Scotland, the Management and the key officials made plans to introduce a unique service in their bank as one of the way to serve the interior rural area to provide banking facilities for the people residing there. This Bank introduced "Banking on Wheels" which is the first in the history of the Banking sector in India. This case study deals with exploring the concept further and studying its benefits, viability from the users'/non users' as well as service providers' perspective. The researcher has found that Bank on wheels initiative has contributed to the financial literacy and inclusion to a great extent.

**KEYWORDS**

Banking, Bank on Wheels, Financial Inclusion, Rural India.

**INTRODUCTION**

Banking in India is said to have developed during the British era. In the first half of the 19th century, the British East India Company established three banks – the Bank of Bengal in 1809, the Bank of Bombay in 1840 and the Bank of Madras in 1843. Together these were called the Presidency Banks which were acting as banker to the Government apart from carrying on general banking. But in the course of time these three banks were amalgamated to a new bank called Imperial Bank in 1921 and later it was taken over by the State Bank of India in 1955. Allahabad Bank was the first fully Indian owned bank. The Reserve Bank of India was established in 1935 followed by other banks like Punjab National Bank, Bank of India, Canara Bank and Indian Bank. At present Indian Banking has become an amazing entity.

**CO-OPERATIVE SECTOR IN INDIAN BANKING**

The co-operative sector is found useful for rural people. The Co operative banks are formed for the purpose of promoting the economic interest of a well defined group of people. The Cooperative Banks have contributed significantly in the development of banking sector in India in the recent years.

**HISTORY AND GROWTH OF CO OPERATIVE MOVEMENT IN INDIA**

Cooperative institutions exist all over the world that provides essential services especially in the rural areas. During the British rule, Nicholson a British Officer in India suggested to introduce Raiffersen model of German agricultural credit Cooperatives in India. In order to follow up this recommendation, the first Cooperative Society Act of 1904 was enacted to form "agricultural credit cooperatives" in villages in India under Government sponsorship. Under this Act, the Cooperatives were to get a direct legal identity as every agricultural Cooperative was to be registered under that Act only. The 1904 Cooperative Societies Act was repealed by 1912 Cooperative Societies Act which provided formation of Cooperative societies other than credit.

India is basically an agrarian economy with 72% of its total population residing in rural areas. The rural people need lot of services in daily life which are met by village co-operative societies. Cooperatives have extended across the entire country and there are currently an estimated 230 million members nationwide. The cooperative credit system of India has the largest network in the world and cooperatives have advanced more credit in the Indian agricultural sector than commercial banks. The village cooperative societies provide strategic inputs for the agricultural sector, consumer societies meet their consumption requirements at concessional rates; marketing societies help the farmer to get remunerative prices and co-operative processing units help in value additions to the raw products etc. Various development activities in agriculture, small industry marketing and processing, distribution and supplies are now carried on through co-operatives. The cooperative sector accounts for 55 percent of the looms in the hand-weaving sector. Dairy cooperatives operating under the leadership of the National Dairy Development Board and through 15 state cooperative milk marketing federations has now become the largest producer of milk in the world. However, Insurance is a field where the immense potential of cooperatives still remains untapped.

**THE SOUTH CANARA DISTRICT CENTRAL CO-OPERATIVE BANK LTD.**

The South Canara District Central Co operative Bank Ltd is registered as a Co-operative Society under Act II of 1912 which started its operations on 24<sup>th</sup> January 1914 and today this bank has got 63 branches spread all over the undivided Dakshina Kannada District. The bank endeavours for the growth and development of co operative movement in Dakshina Kannada and Udupi Districts.

**ABOUT SCDCC**

The SCDCC Bank Ltd is established basically to fulfill the financial needs of farmers in particular. It is striving hard to provide timely and adequate finance through the primary Agriculture Societies at the ground level. The bank is taking active participation in Government sponsored schemes such as S.G.S.Y, Swarojgar Credit Card Scheme, etc. It is not less than any other nationalized bank in terms of the quality of service and infrastructure. The Bank has been awarded as **Best DCC Bank** from KSC Apex Bank, Bangalore since the last 14 years.

**SCDCC BANK ON WHEELS: A SPECIAL STUDY**

SCDCC Bank Ltd has introduced "Banking on Wheels" which is the first in the history of the Banking sector in India. In the year 2006, the Board of Directors of SCDCC conducted a detailed discussion on this unique service and made plans to introduce this service in their bank as one of the way to serve the interior rural area to provide banking facilities for the people residing there. They chose certain areas in Mangalore district which had **no banks** in and around 2 km radius. Plans were made as to the choice of the vehicle, its structure, layout, workforce required, day and time of arrival and departure for each chosen location. The proposal was then, sent for approval to the Registrar of Co operative Societies, Bangalore in 2007. The approval was granted in the same year. The successful operation of Mobile Banking began from August, 2007 and since then it has become one of the most useful service for that population whose area has been chosen for the mobile bank visit. The Mobile bank consists of 1 Manager, 1 Clerk, 1 Attender cum Appraiser, 1 Van Driver, 1 Gunman (Security).

The Mobile Banking concept should not be mistook as a service of banking through mobile phones. Initially many people thought that this was SMS banking which usually means Mobile Banking. SCDCC Bank uses a vehicle which has the infrastructure to carry out some of the basic banking activities. This vehicle visits

remote interior places and conducts banking activities with the people for whom banking is not easily accessible. Hence the suffix “Banking on Wheels” is used which means that the SCDCC bank comes near to the doorsteps of the customers. This service has been found really useful for housewives, aged people and other petty businessmen and to those who do not have time to go into the city to conduct their banking activities. As a customer of the mobile bank of SCDCC, the account gets connected with the Kodialbail branch that is close to the Head Office. Hence a mobile bank customer is no different from Kodialbail branch customer. He can deposit money in his account, withdraw cash, apply for loans, issue cheques, DDs, or get whatever he wants to as in case of any other banks. Therefore, the mobile bank is nothing but a bank in motion. It settles down in a particular place for a particular day for a time period decided in advance. The customers come there and get their work done. The mobile bank will be regularly and promptly arriving at the places determined earlier. In case, by some reasons, the customers miss the mobile bank timings, then they can visit the Kodialbail branch and get their task done.

### BASIC INFRASTRUCTURE AND OTHER ASPECTS OF MOBILE BANK

TATA 407 Vehicle is specially designed for “Bank on Wheel” project. It is well furnished with AC System, Customer counter, Manager Cabin and light music. It is well equipped with 3 Computer systems, UPS system and Printers. A hidden camera is installed to provide security for the Mobile bank. The data is transferred through the wireless modem. A Server with Server rack for the Mobile bank is maintained in the Head office. In each counter there is facility of safe lockers to keep the pledged jewels and cash received from the customer and there is separate safe called as Defender Safe in the Mobile bank to keep the jewels and cash. Vehicle Tracking System has also been installed from Ambara Software Technologies Pvt. Ltd, Bangalore through which the concerned officials in the Head office can watch/ monitor the Mobile bank’s movement through internet. Mobile Van is specially designed with the local Vehicle Body builders. The outer view and the inside view of the van is shown in the following pages. The photos were clicked by the researcher at the time of field visits made in the area where the Mobile bank serves. The software and the hardware for the Mobile bank have been provided by M/s Zenith Infotech Ltd., Bangalore.

FIG. 1: PHOTOS CLICKED AT KUNJATHBAIL, MANGALORE: OUTER VIEW OF THE MOBILE BANK





FIG. 2: INNER VIEW OF THE MOBILE BANK AND THE MANAGER AND CUSTOMER SERVICE COUNTERS



### HISTORY OF MOBILE BANKING

The origin of mobile banking can be traced back to the Second World War, when field cash offices provided all units and individual officers with required currency of the country in which they were based and received money from army post offices and officer's shops. The US army operated pay offices from vans, one of which, a Studebaker, was purchased by National Bank of Scotland to set up its first mobile banking service.

The Royal Bank of Scotland had introduced the world's first commercial mobile banking service in November 1946. The National Bank of Scotland, founded in Edinburgh 1825, had an extensive network of branches spread over a wide geographical area. One problem it faced was how to provide banking facilities in remote areas, where the population was too scattered to warrant the establishment of a sub-office. Later in 1946, the idea of introducing a 'Traveling bank' on the Isle of Lewis was suggested to serve, in particular, the island's crofter weavers who previously had to take a day of work to use the National Bank branch in Stornoway. Accordingly the mobile bank, based at Stornoway branch under the charge of the local agent Donald McIver, went into service on Tuesday 5 November, 1946. The van was on the road for 4 days a week and five the next week and traveled, on an average, some 50 miles per day. The new service brought about a new spark of interest in the national media. Thus, this innovation was found to be greeted with a widespread enthusiasm. The 'extreme satisfactory' progress led them to launch a 2<sup>nd</sup> mobile banking service on 8 November, 1947. Encouraged by its success, several other banks subsequently introduced their own services. The idea also spread to England where mobile caravan trailer units were used by banks at exhibitions and agricultural shows.

News of the mobile bank soon reached an international audience too and the National Bank of Scotland received enquiries from banks in Africa, Europe, India, Israel, New Zealand and the USA. In 1953, they introduced a mobile bank service using luxurious caravan units; several such changes and improvements were introduced. In the year 1959, National Bank of Scotland amalgamated with Commercial Bank of Scotland (Estd. 1810) to form National Commercial Bank of Scotland and the new bank remained fully committed to the mobile banking service and further extended its service in new areas during the early 1960s. In 1962, the bank also introduced a mobile service with a difference, a boat bank that served the islands around Orkney. In the year 1969, National Commercial Bank of Scotland amalgamated with the Royal Bank of Scotland to form the Royal Bank of Scotland Ltd. The Royal bank had itself begun a regular mobile banking service. Now the services were no longer restricted to them. Furthermore, a flying service, using the bank's small air carrier subsidiary, Loganair, was introduced in Orkney Islands. This service superseded the boat bank!!! The mobile bank services continued to develop in operation. The 1990s witnessed further changes by the introduction of 2 new environment friendly vehicles with low emission engines. The vans continue to provide vital service to the communities they serve.

### BANK ON WHEELS IN INDIA: RBI PERMITS DOORSTEP SERVICE BY BANK

The Reserve Bank of India has allowed banks to start doorstep banking, including collection of cash but with its prior approval. Individual banks will have to formulate separate schemes for doorstep banking and obtain RBI approval before starting the service. But due to malpractices, it was banned in the year 1983. Later in one of its circular issued, the RBI decided that a scheme for providing services at the premises of a customer within the framework of Section 23 of the Banking Regulation Act may be formulated by the Banks with the approval of their boards and submitted to the Reserve Bank for approval.

### THE SUCCESS OF SCDCC BANK ON WHEELS

SCDCC bank introduced the mobile banking service for the first time in the history of banking sector in India. The idea has been sought by various others banks from SCDCC after they introduced this service. The SCDCC bank received enquiries from the officials of other banks to study the working and to implement the same. But before the other banks follow the suit, SCDCC bank has to work enough to popularize this concept and win the trust of the people and increase their customer base. The success of the mobile bank is possible only when there is increased growth in the number of customers.

Visits has made by the researcher in the field and key observations and findings highlighted in the coming paragraphs with an intend to the extent to which this unique service has been beneficial to rural remote population/customers. Besides, few non users of this service were also interviewed to determine out the basic reason as to why they are not a customer of SCDCC mobile bank that comes to their area for banking service.

### IS THE SERVICE WORTHWHILE? FEW OBSERVATIONS

Meeting few customers informally, various inputs on the working of the idea/concept was found. Questions relating to the quality of the services of the mobile bank and suggestions for improvement were asked. Few customers were interviewed as and when they had approached the mobile bank.

### THE FINDINGS ARE LISTED IN BRIEF AS FOLLOWS

1. Majority of the users of the mobile banking services are females especially housewives who do not have the convenience of a nearby bank nor have the time to visit the nearest bank.
2. It is basically the middle aged group (i.e. 31-45 years) who have been found to be regularly using the mobile bank services to a great extent.
3. The services offered by the Mobile bank is equivalent to any brick and mortar banks. However, majority of the customers have used the mobile bank for savings and other deposit schemes like RD, FD etc. Mobile banking users utilize this service mainly for depositing their hard earned money. Therefore, the scheme of deposits is more popular than other services offered by the bank. This actually marks the beginning of capital mobilization in the rural areas.
4. All the customers who were interviewed had no complaints on the mobile banking service. It is because the employees have been kind enough to get their problems solved on the spot. Moreover, the activities are not too complex to lead to any delay. That is why the customers have got all their problems

- solved in the mobile bank. Thus, the mobile banking unit has reported a zero customer grievance. The customers are extremely satisfied with the timings i.e. the arrival and departure, cleanliness and layout (aesthetics/ambience), seating arrangements, employee attitudes and behavior towards the customers. Many opined that the bank officials have maintained a very informal environment in the bank which makes the customers most comfortable.
5. The performance of the mobile bank has been liked and found excellent by all the customers. This proves the point that with adequate technology and opportunities, banks can explore rural areas, bank the unbanked without major change in the service quality.
  6. It was felt by the customers that the bank has not advertised or publicized this concept and attributed this reason for low customer base. They felt that there is great need to popularize its services.
  7. On asking what special feature of Mobile bank had attracted them the most, almost everyone said "the bank comes to our doorsteps (near to our place of residence)". It has saved a lot of their time and money and avoided moving into cities to visit the bank. While their amount of savings is not that big, they find it convenient to pool their savings in mobile bank when it pays visit to their area. The distance between their homes/shops and the van is not much and they can visit the bank in their domestic clothing.

Some others opined that the employees are customer friendly and provide quick service. They give a personal touch to the customers. The employees themselves help them fill up the forms and also give timely information and suggestions. It was good to see a bank visiting them than they going to the bank.

8. On asking for suggestions to improve the Mobile banking service of SCDCC bank, many of the customers were already satisfied with whatever is being offered by SCDCC's mobile banking services. Their need for banking activities easily gets done here and hence they do not expect more. Some others have suggested the following aspects:

- i) Extensive marketing of their products and services to inform and persuade the public to become their customers.
- ii) To expand their area of operation. i.e. find out some more areas and provide the mobile banking service there too.
- iii) To provide PIGMY service, if not through mobile bank, but through their registered agents.
- iv) Sufficient canvassing on the mobile banking service.
- v) Revise the visiting timings. Either visit the places more number of times in a week or more number of hours etc. to enable increased business.
- vi) Suggestions have been given on the parking of the van. It should be parked in a visible, clean, and suitable area.
- vii) Some want to have a permanent bank branch in their village rather than mobile bank. This is to ensure continuous access to banks in their area.
- viii) The manager of the mobile bank should be given the power to sanction petty loans based on his judgement about the creditworthiness of the customer. He may be prescribed a sanction limit say Rs.25000/ max. The decision to sanction loans should purely depend upon the manager. He should sanction such petty loans based on the customer database and his view on the customer's loyalty.
- ix) Many aged people receive pension but they are credited to their account in some other avenues. The aged people have to personally visit and get the pension amount. They may have to spend Rs.30/ on travelling while they receive a pension of Rs.50 or less. The amount received as pension seems to be worthless in such cases. If the mobile bank of SCDCC enables the collection of such pension amount, then the facility of mobile bank will be definitely be a valuable service to such people.

It is quite difficult to say as to whether the bank will be able to implement all the above suggestions. It depends upon the time, cost, efficiency and the degree of authority that the bank has relating to certain aspects that are expected by the customers from the mobile bank. Of course, SCDCC Bank can think of implementing few/some of the above mentioned suggestions that were put forth by the customers by making a thorough study of its pros and cons.

Besides, several houses and shops in the locality were visited and they were interviewed to know the reasons for not using the Banking on Wheels. The questions were structured in a way which enabled the respondents to answer freely. The findings based on the responses are shown below.

#### FINDINGS AFTER THE INTERACTION WITH NON CUSTOMERS

- As far the awareness of the Mobile banking facility of SCDCC in their area is concerned, almost everyone has given a positive nod. i.e. they did know that SCDCC bank provides Bank on wheels service in their area. But their degree of awareness was different. Some people only knew that a van of SCDCC bank arrives at a given time either once or twice a week regularly. A few others knew that SCDCC bank has started their banking services through mobile van in their area.
- One of the main objectives of the study was to know the reasons as to why the mobile banking facilities of SCDCC bank were not availed by the non customers. The responses to the query have been attributed to **religious, economic and personal factors**. The following were their responses.
  - a) The wife of an Islamic guru said that their religion does not encourage receipt and payment of interest. It is a sin to charge interest, pay on the principal and receive interest along with the principal. So their family did not have a single bank account. They deposit their cash in an office in another location and they can withdraw as and when need arises. Thus the basic banking activities were discouraged and it is impossible that this kind of family becomes the customer of any bank as such. Well, this indeed has led to the growth of Islamic banking. India still has a long way to go in this concept.
  - b) Some ladies opined that they do not need the facility because their husbands manage all the financial affairs by themselves and they do not have to bother about savings etc. They are a mile away from the banking activities. This provides need for spreading financial literacy among rural women.
  - c) Some others do not have the trust that the mobile bank will continue to serve their area once the mobile banking business of the bank grows in size. Initially when the service was started the people feared of the safety of their investments.
  - d) Some said that their incomes are not sufficient to meet their expenses and in such situation, they cannot think of savings at all. Probably their incomes are too low to meet their basic needs or they have not planned their finance well.
  - e) There were some families which did not have any bank account at all. They were totally unaware of the importance of savings and investment and the various facilities that the banks offer. For such families, mobile bank will surely be not less than an alien. The low level of education, lack of enthusiasm to learn new things, ignorance, and unwillingness to face new changes are the probable causes for this.
  - f) It was also evident that the promotional steps to publicise the mobile banking service in these areas is insufficient. There were a few ladies who were totally unaware of the Mobile bank coming to their area. While interaction, these ladies seemed to be quite participative in the financial affairs of their family. Thus, the bank has to increase its publicity on mobile banking. The best way to increase the number of customers for the mobile bank can be through canvassing about the mobile banking service and ensuring them about their safety of interest.
  - g) Some already had their account in post office and pigmy and have committed themselves in pooling their savings in similar other avenues only who did not want to shift their savings in this avenue and wanted to continue in the previous avenues and are satisfied with it. It's only with regard to depositing of their savings. As far as their withdrawals etc are concerned, they said that they can wait or even plan for alternatives to get cash on hand rather than rush to the ATM and get quick cash. They are ready to spend a little more of their time and energy and they want to remain loyal to their existing sources of investment. This is the psychology of the customers which is very hard to be influenced. There is also a kind of psychology where in which the customers who are comfortable with getting their activities done in a fixed premise rather than on a moving vehicle. So they might have a different opinion on a brick and mortar bank and a bank in motion. However, this issue doesn't become a threat to financial literacy activities since people are already aware of importance of savings and investments and they are doing it.

#### CONVERSION OF THE NON USERS INTO USERS OF MOBILE BANK- A PATH TO ACHIEVE FINANCIAL INCLUSION

The following are a few suggestions/ways as to how the SCDCC Bank can try to convert the non users of the mobile bank services into the customers:

- a) It is commonly said that women are more conservative than men in the matters of money. If the ladies start to feel that they too should enquire about the incomes that the bread runner generates and also whether the ways in which he manages is really efficient or not, she may be able to advice on better ways to save or invest. Rural women need to be encouraged to involve in the financial matters of the family and plan for investments.

- b) Regarding the matter of trust on the bank by the customers, it is necessary to make them aware that the bank is governed by the rules and regulations of RBI, NABARD and RCS. Hence there's no chance that the bank cheat their customers. Indian banking regulation policies are strong enough to protect the customers. Moreover, withdrawing a service by a bank would create a black mark on the image of the bank and because of this there is hardly any chance of stopping this service. As per the opinions of the key personnel of SCDCC, the mobile bank service is introduced not for earning profit but to serve the remote areas and encourage banking activities among rural population. If this is being made clear, the people with this belief may turn out to become the customers of the mobile bank. This requires more publicity and spread of the right message through right people.
- c) As an issue of social responsibility, the SCDCC bank can conduct programmes and missions on financial education, savings and investments etc which will help the people in these areas to plan their finances well or assist by carrying out any such activities which will help them in earning more and save more.
- d) Before spreading the use of mobile banking service, the SCDCC bank can take steps like adopting that village and spreading the importance of banking in each and every household and help the people there understand the value of banking. It is advisable that the bank deputes the female employees to do the task of canvassing than deputing the male employees as the women in backward areas may not be bold enough to face and patiently listen to the strangers, especially men. Anyhow, the male employees can take charge of canvassing in other areas such as colleges, shops, factories, etc.

### FINANCIAL DATA OF MOBILE BANK (INVESTMENT COST)

A Project (financial) appraisal of SCDCC bank on wheels could have been possible. But the bank does not maintain separate machinery for accounting its incomes and expenses exclusively on mobile bank. All the accounts of the customers, the incomes and expenses relating to mobile bank are pooled with the Head office operations. Hence, it is very difficult to bifurcate the expenditures and incomes on items like interest on loans, deposits etc. However, as stated earlier, the SCDCC Bank on Wheels has been introduced by the bank with an object to make banking service accessible to rural areas and promote banking and not to earn profit.

The following are the data relating to the initial investment cost incurred by SCDCC bank on its mobile bank. The recurring expenses are basically the cost of diesel, electricity, salaries to staff, insurance, etc the information on which was difficult to obtain.

Particulars	Amount (INR.)	Amount (INR)
TATA 407 Vehicle cost		506000
Speed Governor		16000
Vehicle Body construction		
Labour cost	310000	
Materials	695000	
Total cost		1005000
KEB Connection charges		83000
Other expenses ( Safe lockers, fire extinguishers, mobile handset, battery, jewel weighing scale, vacuum cleaner etc)		207254
<b>Total Capital Expenditure</b>		<b>1817254</b>

On discussion with the Branch manager and staff, various financial estimates were found. There has been a considerable increase in number and the quantum of deposits. The FD schemes have doubled in amount which has contributed the maximum to the increase in the Total Deposits within a short period. Thus, it can be inferred that the mobile bank has become a convenient way to deposit the savings of the customers. Among the Loans, Jewel loan seems to be quite popular as it has increased considerably by 200%. However, the Total loans have not increased much (rise of 16.97%). The performance of the mobile banking unit for the period between July 2009 and December 2013 shows a lot of progress. If the unit can maintain the momentum of growth which it has shown in this period, it will have no problem in being a very successful venture.

### CONCLUSION

The SCDCC bank, no doubt, has done an excellent job by introducing the mobile banking facility. They have contributed to the economy by helping the rural population by bringing their bank at their doorstep. But the extent to which they have spread the message is quite insufficient. The mobile banking service is going to be successful only when its objective is satisfied. The mobile banking service aims at encouraging savings and all other banking activities among rural population especially women. The bank has to first emphasise on the importance of banking and then persuade the people to become their customers. If they are successful in getting the message understood, then the bank would be greatly contributing to savings mobilization in the country.

SCDCC Bank, a District Central Co-operative bank, will not remain as a District co-operative bank anymore. The grant of licence to open up branches anywhere in India is not just an opportunity to this bank but also a challenge to the bank to break the boundary of the district and enter into new areas. The challenges of expansion can be taken as an opportunity to achieve financial inclusion in the country.

It has the opportunity to conduct itself just like a commercial bank but at the same time adhere to the co-operative bank laws regulating it. Moreover, being a co-operative bank, it need not concentrate too much on profit maximization motive. Instead, the bank is going to create social capital by revolutionizing the banking sector. By serving the backward regions of the country (through SCDCC Bank on Wheels service), it has made an attempt to make the banking service accessible to all. The bank is contributing to the capital mobilization and financial inclusion in a big way. This unique method of Banking on Wheels is a pioneering effort towards the objective of financial inclusion which will benefit society enormously. If the bank continues with such innovative approach, it will be building a massive social capital for itself and the resultant benefits of goodwill should enable the bank to flourish and be a leader in the co-operative banking sector whose example is worthy of emulation by the rest.

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## IMPACT OF RETAIL BANKING ON CUSTOMER SATISFACTION IN DELHI

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## ABSTRACT

*Retail banking in India has fast emerged as one of the major drivers of the overall banking industry and has witnessed enormous growth in the recent past. The inflow of consumerism has its natural spill over effect in terms of increased demand of retail banking products like loans, cards, customized products and services. The Retail Banking Report provides extensive study & analysis of this rapidly growing sector. It mainly covers analysis of the present status, current trends, major issues & challenges in the growth of the retail banking sector. This report helps in Banks, financial institutions, MNC Banks, academicians, consultants and researchers to have a better understanding of the booming opportunities in retail banking in India.*

## KEYWORDS

Bank, Retail, Consumerism, Demand.

## INTRODUCTION

**R**etail banking in India has fast emerged as one of the major drivers of the overall banking industry and has witnessed enormous growth in the recent past. The Retail Banking Report encompasses extensive study & analysis of this rapidly growing sector. It primarily covers analysis of the present status, current trends, major issues & challenges in the growth of the retail banking sector.

Retail banking is banking in which banking institutions execute transactions directly with consumers, rather than corporations or other banks. Services offered include: savings and transactional accounts, mortgages, personal loans, debit cards, credit cards, and so forth. Retail banking aims to be the one-stop shop for as many financial services as possible on behalf of retail clients. Some retail banks have even made a push into investment services such as wealth management, brokerage accounts, private banking and retirement planning. While some of these ancillary services are outsourced to third parties (often for regulatory reasons), they often intertwine with core retail banking accounts like checking and savings to allow for easier transfers and maintenance. Often retail banking is referred to as "non commercial banking" this would be your common checking accounts and consumer loans.

It is referred to, as 'core' because it is a core or central to the banks business. Few banks survive from just retail banking services, they need those core business accounts that are perhaps more stable than retail business. The exact term usage may also be based on the part of the country you live in as is often the case with our language.

## RETAIL BANKING ACTIVITY

Retail banking activity is commonly understood to comprise:

- banking services for consumers (individuals/private households) and
- banking services for small- and medium-sized enterprises (SMEs).

The delineation of each of these two segments, however, is not standardized by, for instance a nomenclature for central banks' statistics or other official databases. The inclusion or exclusion of customer categories from these segments depends, to a large extent, on cultural habits, market developments or the individual business strategies of banks. In some countries or specialized banks, for example, services for wealthy individuals and households fall under the so-called segment of private banking. Moreover, whether a certain size category of SMEs belongs to the segment of retail banking or the segment of corporate banking varies from bank to bank.

In order to reduce this complexity, the Authority has used the following definitions for the purposes of the sector inquiry:

- **Personal banking**, i.e. banking products and services for consumers including current accounts (and related services such as ATM, direct debit and credit transfers), sight deposits and other savings accounts, credit lines/overdrafts (no limits on individual asset size) and consumer loans;
- **Business banking**, i.e. banking services for enterprises up to a maximum turnover of EUR 10 million annually and including services such as current accounts, term loans and credit lines. This report, following industry and literary usage, will also use the term 'SME Banking' or 'SME Customers' for this sub-segment.

In carrying out the inquiry and, for instance, addressing comprehensive questionnaires to banks in the EFTA States, the Authority has not applied a rigid definition within these general parameters. This approach has allowed for individually flexible definitions, for example by accepting the banks' own definition of SME business even where they may be narrower in scope.

## LITERATURE REVIEW

Retail banking in India is not a new concept. It has always been prevalent in India in different forms. For the last few years it has become synonymous with mainstream banking for many banks. The typical products offered in the Indian retail banking segment are housing loans, consumption loans for purchase of durables, auto loans, credit cards and educational loans. The loans are marketed under attractive brand names to differentiate the products offered by different banks. As the Report on Trend and Progress of India, 2007-08 has shown that the loan values of these retail lending typically range 10,000-1,00,000. Retail Loan outstanding was Rs 32,434.84 crore as on 31st March, 2011, as against the level of Rs 24,247.71 crore as on 31st March, 2010. A growth of 33.76% (Rs 8,187.12 crore) was registered during 2010-11 as against a growth of 23.53% (Rs 4,619.76 crore) registered during the previous year. The growth under five key products (excluding LABOD/ODBOD etc) was 21.56% (Rs 4,094.72 crore) over the level of Rs 18,992.00 crore at end-March, 2010. During the same period of 2009-10, growth under the five key products was 22.65% (Rs 3,507.36 crore) over the level of Rs 15,484.63 crore as of end-March, 2009.

Technological innovations relating to increasing use of credit / debit cards, ATMs, direct debits and phone banking has contributed to the growth of retail banking in India. Demand for such credit. In this backdrop let me now come two specific domains of retail lending in India, viz., (a) credit cards (b) housing. Credit cards in India. While usage of cards by customers of banks in India has been in vogue since the mid-1980s; it is only since the early 1990s that the market had witnessed a quantum jump. The total Number of cards issued by 52 banks and outstanding increased from Rs 4.69 crore as on end December 2007 to Rs. 6.33 crore as on end December 2008. The actual usage too has registered increases both in terms of volume and value. Almost all the categories of banks issue credit cards. But Credit cards have found greater acceptance in terms of usage in the major cities of the country, with the four major metropolitan cities accounting for the bulk of the transactions. In view of this ever increasing role of credit cards a Working Group was set up for regulatory mechanism for cards. The terms of reference of the Working Group were fairly broad and the Group was to look into the type of regulatory measures that are to be introduced for plastic cards (credit, debit and smart cards) for encouraging their growth in a safe, secure and efficient.



## OBJECTIVE OF RESEARCH AND HYPOTHESIS

The main objective of this project is to study the awareness of the satisfaction of customers regarding the Retail Banking .During this research program period I have to achieve something, which is helpful for my career and some value addition to the Banking Company. It gives me good opportunity to expose and creating good impression of corporate mind. Others

1. To find out what type of problem customer are facing related to service delivered by Indian Banks.
2. To find out the level of customer satisfaction from the product marketing of Retail banking.
3. To explore the major influences of shareholder value and which customers are of primary importance.
4. To identify key drivers of growth within the organization and understand where investment is likely to be made and where costs are likely to be reduced between now and 2015.
5. To determine the relative importance of individual Risk Management areas and whether the costs attached to Regulation and Compliance will have a positive effect on the company.

## RESEARCH METHEDODOLOGY

The Research and Methodology adopted for the present study has been systematic and was done in accordance to the objectives set which has been detailed as below. My research design is descriptive as descriptive research –

- Describe the characteristics of certain groups/ samples / populations.
- Estimate proportions in specified populations.
- Make specific predictions.

### RESEARCH DESIGN

The study used both descriptive and quantitative research designs. Descriptive method was used to describe the characteristics/ dimensions of the research variables. Quantitative method was used to collect data from a given number of respondents. To a lesser extent qualitative research method was also used in order to get opinions from different respondents. The study was also cross-sectional in nature because the researcher gathered data once over a period of days in order to answer the research questions.

### STUDY POPULATION

The sample population was include; top management, lower level employees as well as clients/ customers totaling 60

### SAMPLING TECHNIQUES AND PROCEDURES

Purposive and simple random sampling method was used during the study. Management was used purposely selected because of their knowledge or information regarding the area of the study. A simple random sampling technique was used to select the customers so that they also provide specific views on the quality they need and their expectations of ING VYSYA Bank Delhi.

### SAMPLE SIZE

A sample of 53 customers was considered out 60 studies.

### DATA COLLECTION, INSTRUMENTS AND DATA SOURCE

Data was collected from both primary and secondary sources.

### SOURCE OF DATA

The main source of primary data was through self- administered questionnaire, interviews and observations.

Secondary data was obtained from already existing literature that is from textbooks, journals, brochures, and internet and bank reports.

### INSTRUMENTS

Questionnaires were designed for the staff and customers. Closed ended questions will be used. Already existing literature that is from textbooks, journal will be used.

### DATA PROCESSING AND ANALYSIS

Data was coded, scrutinized, edited manually by the researcher to check for accuracy and completeness.

### DATA ANALYSIS

Data was presented and analyzed using tables, percentages, frequencies and SPSS packages.

## FINDING & DISCUSSION

Of the 60 targeted questionnaires 53 was returned, 49 were client at ING VYSYA Bank. This presents a response rate of 88.33% and was deemed adequate for the purpose of this study.

TABLE 1: GENDER

	Frequency (f)	Percentage (%)
Male	26	49.1
Female	27	50.9
<b>Total</b>	<b>53</b>	<b>100</b>

Source: Primary Data

From table above, 49.1% of the respondents were male and 50.9% of the respondents were female.

This show both male and female prefers ING VYSYA Bank's services. The research finding shows that there is a relative gender balance.

TABLE 1: AGE DISTRIBUTION OF THE RESPONDENTS

Age	Frequency (f)	Percentage (%)
15-25	7	13.21
25-40	36	67.92
40-50	9	16.98
50 above	1	1.89
<b>Total</b>	<b>53</b>	<b>100</b>

Source: Primary Data

The table above shows that 1.89% respondents were aged 50 years and above which implies that these respondents were retired and unemployed. The research finding also shows that 67.9% of the respondents were aged 25-40 years. This shows that most of the respondents were mature, independent and productive therefore were eligible to operate transactions in ING VYSYA Bank.

**TABLE 2: EDUCATION LEVEL OF THE RESPONDENTS**

	Frequency (f)	Percentage (%)
O' level	1	1.9
A' level	5	9.4
Diploma	10	18.9
University	35	66.03
Post graduation	2	3.77
<b>Total</b>	<b>53</b>	<b>100</b>

*Source: Primary Data*

Table 3 shows that 66.03% of the respondents are University graduates. This research finding shows that all the respondents are educated and knowledgeable. Therefore they can read and understand the questionnaire. This means that they were in position to self administer the questionnaires. And this greatly reduced the problem of ignorant respondents and language barrier and valuable information with regards to quality service was obtained.

**TABLE 4: HOW LONG HAVE YOU BEEN A CUSTOMER OF ING VYSYA BANK?**

Years	Frequency (f)	Percentage (%)
1-5	37	69.81
6-10	9	16.98
11 and above	7	13.21
<b>Total</b>	<b>53</b>	<b>100</b>

*Source: Primary Data*

According to the table above, 69.81% of the respondents have been the bank's customers between 1-5 years, 16.98% were between 6-10 years while 13.21% have been customers for over 4 years and above. The 69.81% also indicates the recent increased banking activities in the last 5 years. This implies that the quality of the banking services at ING VYSYA bank is excellent hence leading to customer retention.

**FACTORS INFLUENCING QUALITY SERVICES IN RETAIL BANKING****TABLE 5: RESPONSE ON RELIABILITY**

Response	Frequency (f)	Percentage (%)
Strongly agree	18	36.74
Agree	29	59.18
Disagree	2	4.08
Strongly disagree	0	0
<b>Total</b>	<b>49</b>	<b>100</b>

*Source: Primary Data*

The table above shows the response about reliability as one of the factor that influences quality services where by 36.74% Of the respondents strongly agree, 59.18% agree, 4.08% disagree. From the research finding it is shown that majority of the respondents agreed that reliability/consistence and dependability greatly improved the quality of services offered to customer in ING VYSYA Bank.

This indicates that services delivered in Bank are standardized, simplified and consistent, so customers could receive the service without any problem as it was revealed by Arun Thiagarajan - Chairman.

**TABLE 6: RESPONSE ON COMMUNICATION**

Response	Frequency (f)	Percentage (%)
Strongly agree	10	20.83
Agree	28	58.33
Disagree	8	16.67
Strongly disagree	2	4.17
<b>Total</b>	<b>49</b>	<b>100</b>

*Source: Primary Data*

The table above shows responses about communication as one of the factors affecting quality services where by 20.83% strongly agree, 58.33% agree, 16.67% disagree and 4.17% strongly disagree. From the researchers point of view it is shown that the majority of respondents agreed that keeping customers informed in the language they understand can greatly influence quality services as revealed by ANAND RATHI (2012) which indicate that ING VYSYA Bank has got good communication skills, however 16.67% and 4.17% of respondent disagree, this is because of modes of communication like brochure and television which cannot be accessed by some customers.

**TABLE 7: RESPONSE ON CREDIBILITY**

Response	Frequency (f)	Percentage (%)
Strongly agree	51.25	51.02
Agree	14	28.57
Disagree	7	14.29
Strongly disagree	3	6.12
<b>Total</b>	<b>49</b>	<b>100</b>

*Source: Primary Data*

The table above shows the responses about credibility as one of the factors affecting quality services where by 51.02% of the respondents strongly agree, 28.57% agree, 14.29% disagree that 6.12% strongly disagree. From the research finding it is shown that the majority of the respondents strongly agreed that trust worthiness and having customer's best interest at heart and can greatly improve quality services in the Bank. The big number of respondents (51.02%) indicates that the bank's staff has tried to be honest and having customer's interest at heart as revealed by ANAND RATHI (2012). that credibility it's about having customers interest at heart, contributing to company's name, reputation and privacy discussion.

**TABLE 8: RESPONSE ON COURTESY**

Response	Frequency (f)	Percentage (%)
Strongly agree	20	41.67
Agree	14	29.17
Disagree	10	20.83
Strongly disagree	4	8.33
<b>Total</b>	<b>49</b>	<b>100</b>

*Source: Primary Data*

The table above shows response about courtesy where by 41.67% of the respondents strongly agree, 29.17 agree, 20.83% disagree and 8.33% strongly disagree. The research finding shows that the majority of the respondents strongly agreed that consideration and friendliness to with customers can greatly influence the quality services in the Bank. This implies that bank emphasizes being polite, respect and create friendliness to their customer. Hence courtesy being one of the contributing factors towards quality services in the bank leading to excellent customer satisfaction.

TABLE 9: RESPONSE ON SECURITY

Response	Frequency (f)	Percentage (%)
Strongly agree	29	59.18
Agree	18	36.74
Disagree	2	4.08
Strongly disagree	0	0
<b>Total</b>	<b>49</b>	<b>100</b>

Source: Primary Data

The table above shows the response about security as one of the factors affecting quality services where by 59.18% of the respondents strongly agree, 36.74% agree, 4.08% and 4.08% strongly disagree. From the research finds it is shown that the majority of the respondents strongly agreed that security can greatly improves quality services in ING VYSYA Bank. This implies that there is physical safety and financial security as further cited by G K Sateesh Kumar. This gives customers confidence that there assets are in good hands (secure) hence leading to excellent customer satisfaction.

**EVALUATE THE LEVEL OF QUALITY SERVICES**

TABLE 10: EVALUATE THE LEVELS OF QUALITY OFFERED BY ING VYSYA BANK

	Very Good		Good		Not sure		Poor		Very poor		Total	
	F	%	F	%	F	%	F	%	F	%	F	%
Service quality	8	16.33	35	71.43	5	10.20	1	2.04	0	0	49	100
Reliability	5	10.20	6	12.24	7	14.30	28	57.14	3	6.12	49	100
Responsiveness	19	38.78	18	36.14	6	12.24	6	12.24	0	0	49	100
Competence	12	24.50	29	59.18	4	8.16	4	8.16	0	0	49	100
Accessibility	13	26.53	25	51.02	5	10.20	5	10.20	1	2.04	49	100
Communication	6	12.30	34	69.39	5	10.20	4	8.16	0	0	49	100
Credibility	6	12.25	12	24.49	23	46.94	6	12.25	2	4.1	49	100
Tangibles	16	32.65	23	46.94	6	12.25	3	6.12	1	2.04	49	100
Security	7	14.29	6	12.25	7	14.29	26	53.06	3	6.12	49	100
Courtesy	6	12.25	13	26.53	8	16.33	16	32.65	6	12.25	49	100
Empathy												

Source: Primary data

The table above indicates that the level of service quality is still poor in regard to responsiveness 57.14%, courtesy (53.06%) and Empathy 32.65%. In case of responsiveness bank is failing to perform its duty of reacting in positive way, willingness and readiness of employees to provide services to their customers.

With 32.65% of the respondents, shows that the bank does not offer specific customers requirements and individualized attention.

This indicated that the bank does not provide care to their individual customers and they still lack some politeness, consideration and friendliness or personal contact with their customers.

From the above table, 46.94% of the respondents are not sure of tangibility of the bank since services are intangible; there is a need for the bank to make their services tangible through physical facilities and attending to the complaints of their customers, this will enable the bank to improve on their service quality hence leading to excellent customer satisfaction in the bank.

**DOES ING VYSYA BANK SATISFY YOUR NEEDS AND EXPECTATIONS**

TABLE 11: THE RESPONDENT WERE ASKED WHETHER ING VYSYA BANK SATISFY THEIR NEED AND EXPECTATION

Response	Frequency (f)	Percentage (%)
Yes	34	69.39
No	15	30.61
<b>Total</b>	<b>49</b>	<b>100</b>

Source: Primary data

From the above table, 69.39% of the respondent said yes and 30.16% said no. This indicates that ING VYSYA Bank relatively satisfy its customer's needs and expectations. The big number of respondents (69.39%) shows that the bank always offers quality services. This hence enables it to satisfy its customer's needs and expectations.

TABLE 12: FEATURES OF CUSTOMER SATISFACTION

Features	Very much		Much		Some how much		Little		Very little		Total	
	F	%	F	%	F	%	F	%	F	%	F	%
Location	27	55.10	12	24.49	7	14.29	3	6.12	0	0.00	49	100
Skilled employee	10	20.40	16	32.66	18	36.14	5	10.20	0	4.08	49	100
Loyalty	4	8.16	20	40.82	18	36.14	5	10.20	2	4.08	49	100
Performance	20	40.82	9	18.37	15	30.16	4	8.16	1	2.04	49	100
Competitive interest rate	8	16.34	10	20.40	6	12.25	6	12.25	15	30.61	49	100
Retention	10	20.40	16	32.65	16	32.65	2	4.08	5	10.20	49	100

Source: Primary data

From the research findings above all features contribute to the customer satisfaction however the level of satisfaction varies. The table above indicates that the level of customer satisfaction is very much in regard to location (55.10%), performance (40.82) however it is very little in regard to competitive interest rate (30.61) and retention (10.20%). Therefore there is a need for the bank to improve on the weak features in order to satisfy their customers and improve on their service quality.

TABLE 13: RELATIONSHIP BETWEEN QUALITY SERVICES AND CUSTOMER SATISFACTION

## Correlations

		QUALITY SERVICE	CUSTOMER SATISFACTION
QUALITY SERVICE	Pearson Correlation	1	.988 **
	Sig. (2-tailed)	.	.000
	N	49	49
CUSTOMER SATISFACTION	Pearson Correlation	.988 **	1
	Sig. (2-tailed)	.000	.

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Source: Primary data

From the table above, it is visibly expressed that there is a strong relationship between quality service and customer satisfaction ( $r=0.988^{**}$ ,  $P = 0.01$ ); this indicates that there is a positive relationship between quality services and customer satisfaction which also implies that as the quality services attributes are suitably chosen and practiced, customers will notably become satisfied. Hence maintaining high quality services in ING VYSYA bank will have excellent customer satisfaction where as low quality services will lead to a decline in customer satisfaction which also may result to loss of customers.

## CONCLUSION

From the research findings, the research objectives were achieved by identifying the determinants of service quality as reliability, accessibility, credibility responsiveness tangibles, security empathy and also satisfaction features were identified as location, performance, loyalty, competitive interest rates and skilled employees.

The research was to establish that there is a clear relationship between quality services and customer satisfaction.

These two variables should work hand in hand to ensure success and survival of ING VYSYA Bank.

The researcher concluded that quality service is an important factor when one is to retain customers. The decline in the customer satisfaction in ING VYSYA Bank is due to a decline in quality services provided.

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**AN EXPLORATORY STUDY ON ORGANISATIONAL CRISIS IN INFORMATION TECHNOLOGY INDUSTRY**

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**ABSTRACT**

*Leading an organization through a crisis is a tough challenge for a manager. Crises may result from a natural disaster affecting the organisation's business continuity, human error affecting people of the organisation or some form of business crisis. To address the severity of such crisis situations, Information Technology (IT) industry was selected for the purpose of the study. Amongst the most prominent crisis that was found prevailing in IT industry was losing its executives with key skills. There was a time when an employee used to stay with one company for his or her entire career but in today's workforce, what remains constant are employees switching their job from one company to the other. In lieu of the current scenario, the main objective of the study attempts to identify the most prominent crisis prevailing in IT industry. To attain the primary objective of the study, the authors have identified two secondary objectives. The first one is to determine the frequency of occurrence of such crisis and secondly to determine the level of intensity of occurrence of such crisis.*

**KEYWORDS**

HR crisis, IT industry, loss of key executives, Organisational Crisis.

**INTRODUCTION**

**B**uzzwords like globalization, accelerating rate of technological advancement, empowerment, downsizing and talent management reflects that the era of 21st century is faced by intense ups and downs. Regardless of the kind of business one is into, today's organizations are operating in an environment categorized by high turbulence and risk (Pandey & Pande, 2013). While it is continuously being discussed about how to combat this storm, it becomes extremely important on part of managers to find a way out of such turmoil.

A growing body of researchers have been using the term "crisis" on the basis of their discipline. Now there seems to be a good level of agreement in the management literature about the definition of a crisis. This broad consensus has been consolidated by Shrivastava, P., Mitroff, I., Miller, R., & Miglani, S. (1998). "Crisis is the moment, when company faces with difficulties and such situation becomes dangerous for further company's development". For the purpose of this study "Crisis" has been employed as a comprehensive term that facilitates managers to refer to a situation as a critical event that requires immediate attention. There are issues which come out as an important element when organizations face crises. These issues can be categorised in two ways. First, although the awareness regarding the effect of a crisis event is increasing, most organizations are still found, not fully prepared to handle the same when it occurs (Fegley & Victor, 2005). This may, partially explain why organizations fail to deal with crisis events which may further endanger the organisation's sustainability. The frequent occurrence of different organizational crises highlights the second main issue. This calls for Human Resource Development (HRD) professionals to have a better understanding of what defines a crisis and being aware of the nature and impact of crisis on organisation (Bohlander and Snell, 2010). Such understandings provide appropriate interventions that facilitate organizations in combating challenging times of crisis.

Organizational crises have been examined from multiple perspectives. From the psychological perspective, crises are highly uncertain and complex and this is caused due to the irrational response of organizational leaders and managers (Stubbart, 1987). From the social-political point of view, the cause of crisis is closely related to a breakdown in collective sense making (Turner, 1976) or due to the lack of followers' belief in leadership and cultural norms (Habermas, 1975; O'Connor, 1987). As a result, an organization may experience leadership crisis or employee turnover (Hurst, 1995). From the technological-structural perspective, crisis may result from the technologies that interact with managerial, structural, and other factors of an organization internally or externally (Pauchant & Mitroff, 1992).

Organisational crisis regardless of its type or magnitude has the potential to cause immense damage to the organisation. With respect to this, the present study tries to identify the most prominent organisational crises prevailing in IT industry by determining the frequency of occurrence of such crisis and secondly determining the level of intensity of occurrence of such crisis.

IT industry in India is undoubtedly one of the most dynamic sectors in India's economy. This industry has a major role in transforming India's image as a global player in providing world class technology solutions and business services. Being an employee centric industry, of all the factors of production, human factor stands as one of the vital factors that rule this industry. In lieu of the contribution that IT sector has made in the resilience of the economy, the primary objective of the study lies in identifying the most prominent crisis faced by IT industry in Delhi/NCR region, hub of industrial India.

After the introductory Section, Section 2 reviews some significant works in the field of crisis management, Section 3 details the objective for the research study; Section 4 describes the data and methodology; the statistical technique used for the study and findings of the study has been depicted in Section 5; discussion and conclusion of the study is shown in Section 6. Finally, Section 7 and 8 concludes with the scope for future research and managerial implications of the study.

**LITERATURE REVIEW: BACKGROUND FOR THE RESEARCH**

Contrary to a common and persistent belief, crises in present-day societies can no longer be considered as rare events (Rosenthal & Kouzmin, 1996). The range of crises in our society has increased (Hart & al., 2001; Quarantelli, 2001; Robert & Lajtha, 2002). Every organisation sooner or later experience some form of crisis. Warning signs thus become the essence of crisis management. Organisational leaders need to be aware of prospective problems and vulnerabilities that can creep into businesses and burst out into crises. Although it's not necessary that all vulnerability erupts into a crisis situation but the warning signs shouldn't be ignored.

All organisations sooner or later experience some form of crisis. Those which seem to be most vulnerable may include organisations that have lately experienced a crisis, organisations with financial difficulties, high-profile organisations with well-known personalities, organisations that are new/start-up businesses, organisations with high stress and unfavourable working conditions (Caponigro, 2000).

To have an in-depth understanding of crisis situations we have described crisis in four different forms:

**CRISES STAGES**

Like most human events, crises can be described in terms of stages. Stages enable planners to monitor risks, progress, target stakeholders, and take strategic action appropriate to the stage of occurrence of crisis situation (Meier, 2011). Fink stated that crisis can consist of up to four different stages. The first stage is the prodromal crisis stage which consists of warning symptoms; the second stage is the acute crisis stage in which symptoms demand immediate and on urgent



basis attention; the third stage is the chronic crisis stage of problems that exist for a considerable period of time; and the last stage is the crisis resolution stage that demands vital managerial decision (Kash and Darling 1998). Likewise, Mitroff (1994) proposed Five Stages of Crisis Management that comprises of Signal detection, probing and prevention, damage containment, recovery and learning.

#### CRISES EVENTS

Crisis has also been described in respect to relatively particular sequences of events and reactions. Mitroff (2005) identified seven types of major crises like Economic, Human resources, Informational, Physical (loss of key plants), Reputational, Psychopathic and Natural Crises.

#### INTERNAL AND EXTERNAL CRISIS

Further crises have classified on the basis of its occurrence within the organisation and those that may be external but would affect the organisation to a large extent. Milburn, Schuler & Watman (1983), Perrow (1984), Shrivastava (1987), Janis (1989), Marcus and Goodman (1991), Pearson & Clair (1998), Dowling (2002), Boin (et al., 2008) have to a large extent contributed to the theories of organisational crisis and have categorised it into Internal and External Crisis, as shown in Table 1.

#### CRISIS IN REFERENCE TO TIME CONSTRAINT

Crises, in the past have also been illustrated with reference to time constraint, such as-immediate, emerging and sustained. These may be associated to sudden high employee turnover, low product quality or involvement of natural events (Parsons, 1996). In every case, managers are called upon to effectively combat the situations by means of human resources, individual's knowledge and experience. Human resources thus become the most important asset for an organization to be competitive.

#### HR CRISIS AND ITS IMPACT ON ORGANISATION

A crisis situation calls for an immediate action which can only be taken in collaboration. Organisational leaders need to understand that there is always a human side to a crisis as people may get hurt physically or psychologically. One of the drawbacks in crisis management planning is that most of the focus and efforts are made on systems, operations, infrastructure and public relations. With people, coming in last on the list of these concerns often leave them with the feeling of being neglected. Ronez (2008) stated in his article that if an organisation doesn't have an adequate HR crisis plan in place, the effects on the workforce could be awful which may also result in loss of key staff and knowledge, absenteeism & high turnover, underperforming staff with lowered morale and lack of motivation, improving health benefits costs, HR-related legal concerns and costly litigations and damaged reputation of the organisation.

In order to combat these circumstances, an organisation needs to take timely measures such as immediate decisions, clear flow of information, leadership and reassurance, understanding and initializing psychological support for rapid return to normalcy.

Researchers have found that human resources crisis influence organizations differently. It may be caused by both internal and external factors. The internal factors include changes in the enterprise system, dissatisfaction with the job, mishandling of organizational managerial issues, and low development of the enterprise. The external factors are related to fierce competition in the market, government policy or some major accidents (Gao & Alas, 2010).

Zhou (2004) and Ye (2005) have highlighted four consequences emerging from a human resources crisis. First, it reduces the overall enterprise performance; second, it hinders communications between managers and employees; third, it causes absurd reactions; and fourth, it results in malevolent situations.

#### HR CRISES AND THE INDIAN IT INDUSTRY

The organization's human resources signify one of its major investments because human resources solely can impact the performance of both the employees and the organization. According to Ivancevich & Matteson (1993), issues related to human resources should be handled and dealt very carefully. Failing to do so, may result in crises, such as job dissatisfaction, poor morale, reduced commitment, lower work quality, burnout, poor judgment and ultimately employee leaving the organization. Today, with number of alternatives present in the labor market, it has become easy for an employee to leave his/her job and switch to another best alternative present. Nevertheless, having excess employees leaving their jobs for any reason may cause a huge effect on an organization's operation. Importantly, loss of key employees weakens a company's competitive advantage, as good teamwork and team workers cannot be duplicated.

IT sector, known for its "human capital" factor, is often characterized by overtime, after dark meetings, late-night works, on-call duty, and a continual state of rush or crisis (Branham, 2005). These situations have bred highly demanding and egoistic workforce who even at the slightest discomfort, leave the organization and join the best available option. Boyar et al. (2012) reported that the struggle for highly trained IT employees will possibly impact employee mobility and will intensify the opportunity to change jobs within India and globally. To withstand such pressures and survive in such an environment, organizations need to have a consistent and committed work force. Forgone are the days, when employees would stay with an employer for years. Today's high-tech employees do not go with the agenda of lifetime employment in one company. They desire for a challenging job and a stimulating pay-package. Sooner or later, they start looking for options in the market when they do not find their job satisfying them. Keeping a diverse set of employees satisfied is phenomenal for most of the software companies. A work situation where almost all companies have conceded the fact that their valued employees are going to leave them some or the other day, what raises a concern is the "time" when he/she thinks of leaving his/her company.

For the purpose of this study, we have selected IT professionals as a focus group. IT professionals have specialized and hard-to-replace skills which can severely impact an organization's competitive advantage. The in-depth literature review reveals that satisfying IT professionals is a troublesome task as they can easily find new opportunities due to the growing demand for IT professionals in different companies. Although, which factors are important for quitting decision of IT professionals still remains an ambiguous problem for companies as well as researchers.

#### RESEARCH OBJECTIVES

##### PRIMARY OBJECTIVE

The primary objective of this research is to identify the most prominent crisis prevailing in IT industry in Delhi/NCR region.

##### SECONDARY OBJECTIVES

To achieve the primary objective of the study, the following secondary objectives have been identified:

- To determine the frequency of occurrence of crisis
- To determine the level of intensity of occurrence of such crisis

#### RESEARCH METHODOLOGY

In order to attain the objectives of the study, the data was collected from both the primary and secondary sources. The secondary data was collected from Journals, internet resources, magazines, etc. Based on an extensive review of the literature on crisis and different types of organisational crisis prevailing across industries, a list of open ended and closed ended questions were framed. These questions were used in the first part of primary survey which consisted of an in-depth interview with 30 industry experts from different departments of IT industries. The result was analyzed and based on further suggestions from the experts the instrument was then fine-tuned and finalized for the purpose of the study. Second part of the primary survey consisted of a sample of 110 IT professionals from different IT industries in Delhi/NCR region. In total 200 questionnaires were emailed, out of which 150 were received and 110 questionnaires were found to be usable. This gave a return rate of approximately 73%. All the questionnaires were sorted and the variables were thereafter coded. The questionnaires were analyzed using the SPSS statistical software (version 17.0).

#### RESULTS

##### PARTICIPANTS

Participants included a sample of 110 IT professionals working in Delhi/NCR. Sixty five percent of the participants were males and thirty five percent were females. Majority of the respondents i.e. 35% fell in age group of 25-30, 32% belonged to 31-35 age group and 21% to 36-40 age group. 45% of the respondent

who were a part of this survey had been in their present organisation for less than equal to 2 years and 48% of the respondents have been serving in their present organisation from 3 to 6 years. Seven percent held diploma degrees, 42% held graduate degrees, and 51% held masters' degrees.

## MEASURE AND FINDINGS

### *Frequency of occurrence of crisis*

The research is based on existing theoretical and empirical information about different organisational crisis. In addition to collecting demographic information, survey items have examined the types of crisis encountered by different IT companies. To know which crisis dominates the IT companies in particular, we have carried out a descriptive analysis to check the frequency of different organisational crisis.

Frequencies of crisis events encountered were obtained by asking participants to respond to the number of occurrences of different crises on a 5-point scale, from 1(never) to 5 (every time).

The responses from the IT professionals to the types and frequencies of crises encountered in their companies over the duration of their careers, from never to every time, are summarized in Table 2. The most commonly crisis events reported were loss of employees with key skills (scoring the highest mean 3.7455), mass absenteeism (mean 2.6364) and loss of employees due to sudden death (mean 1.7091). The least common crisis events included failure to IT infrastructure, key leadership position loss, false rumours, adapting to change, harassment related to caste, creed, etc., disclosing of company's information, slowdown, damaging to hardware/software, sexual harassment and lack of succession planning. To effectively explain the concept of "key" in the present context we did a comprehensive study of what exactly defines an employee being a "key" asset. Every corporation has at least one key executive or set of employees who make a substantial contribution to the operation, profitability and success of the business. Any individual who has critical intellectual information, sales relationships, bank relationships, product knowledge, and/or industry contacts that may adversely affect profits in the event of their absence, may be considered "key" (Financial Visions, Inc.).

### *Intensity of crisis occurring in the organisation*

In scientific literature the most highlighted types of crisis are: natural (caused by nature), industrial, terrorist's attacks, economic, informational, financial, human resource and reputational (Mitroff, 2005). Every crisis has the equal capacity of turning a business upside down. To determine the level of intensity of each type of crisis events, a descriptive analysis was carried out on all the valid data to determine the mean intensity rating for the responses to all the statements in the questionnaire. Using the descriptive analysis on the basis of intensity scale, it was finally possible to identify and distinguish between most significant and insignificant crisis events pertaining to IT industry (Table 3).

Based on the results (Table 2 and Table 3) we get an overview of the most prominent crisis prevailing in IT industry. Loss of employees with key skills ranks highest on the mean intensity rating scale with a mean score of 4.0182 followed by mass absenteeism (2.6545). Disclosing of information had a minimum mean score of 1.4455 which is categorised as extremely low on the intensity scale. This shows that the type of crisis which is frequent and which also poses high severity in the IT industry is the loss of employees with key skills which ranked on the top on both the tables of the descriptive analysis. Although the rest eleven types of organisational crisis scored less on the mean, they cannot be ignored while considering the impact a crisis situation can have on an organisation. This study thus opens a roadway to understand how important it is to know about the risk associated with one's organisation and that if ignored for a long time this risk may lead to a chain of crisis events.

## DISCUSSION AND CONCLUSION

We live in a century which is mainly dominated by human factors. In this human Age, the major engine of economic growth is human capital, the assets that walk in and out of the office every day. No matter how pleasant an employer-employee relationship is, ultimately the employee might leave. And for businesses, this may create a crisis, especially if the employee has been a key part of the team and the company hasn't planned for the departure.

A crisis may arise in many forms. This study explored the type of crises which is prominent in IT industry in Delhi/NCR. According to the findings of the study, loss of key executives, as one part of HR crises emerged as an evident threat to be prevailing in this sector. This study is in contribution with the work done by other researchers (Mitroff, 2005; Sher, 2006; Hilbert and Alas, 2009) where out of the three main Crises Economic, Reputational and HR crisis HR crisis was found to pose devastating impact on organisations.

Today almost every sector is aware that the economy is recovering. With a recovering economy come ample opportunities for employees, "especially key employees" to jump ship to another organization. Loss of key employees can occur in several ways. They can quit, they can retire, they can get sick, and they can move out of town, or sudden death – the possibilities are endless. But if employees quit often, employers would need to find out why people are leaving and what exactly could be done to make the organisation a better place to work.

The findings of the study shows that one such type of crisis that occur frequently and also has high level of intensity of its occurrence in IT industry is the loss of key employees. This meant that despite of the fact known to the management about the situation prevailing in their companies no strong measures have been identified or have been implemented to combat the severity of such situations. After having a clear glimpse of the state of affairs prevailing in the industry this study supports the work done by Sullivan in 2002 where he has mentioned that if one doesn't take time to plan for the loss of key employees and the worst happens, one might suffer an even more distressing ordeal. Backed by different reasons associated with a key employee leaving the organisation few major contributing factors are performance issues, lack of engagement, last minute absences or the employee becoming more vocal in expressing his/her dissatisfaction with their job, pay or benefits. If any of these warning signs crop up, it would be advantageous for the employee's manager/supervisor to take up the matter with the person to find out causes driving these behaviours.

All organisations, regardless of their size, have key people – people whose involvement have a significant impact on the bottom line. Departure of a key employee, especially if it is sudden, can hold-up the completion of projects or delivery of orders. The day-to-day accountability for keeping key people, however, falls on managers and line employees, who must know their powerful role in this talent battle. Human resource department, who is the designer of systemic retention processes, should start thinking strategically. They have got to see the big picture and then identify and point out the implications and real costs related to loss of key people in the organisation.

## SCOPE FOR FUTURE RESEARCH

The study has looked deeply into different types of Crisis. It has attempted to explore the particular type of Organisational Crisis prevailing in IT industry in Delhi/NCR. Loss of key employees came out as one of the prominent HR crisis existing in IT industry. For decades, HR crisis has synonymously been used as workforce crisis, attrition crisis or turnover crises. But there is lot more to be explored in this field as how HR and talent management professionals can assess the loss caused due to departure of key employees of the organisation. This opens up a pathway for the future research considering the findings of this study in IT industry. The study, however, does have its limits which became apparent when areas of future research were identified. The research catering to this field can be made more rigorous by increasing the same size and the results can then be generalised to overall IT industry by involving samples from other regions as well. This study may be extended to overall service sector, as it has been the most dynamic sector of the Indian Economy. A comparative analysis of the crisis prevailing across the industries in the service sector may prove helpful to the management in identifying crisis and thereby developing a strategic plan to combat such crisis. Future research may also look at and measure the specific effects depending on crisis type.

## IMPLICATIONS FOR MANAGERS

Managers specifically from IT industry need to take cognizance of the fact that the knowledge engrossed in the minds of people is difficult to put into words and is therefore not easy to retain. The loss of key employees, even in small numbers, can be distressing to a company. This raises a concern towards tracking not just overall attrition ratios, but also tracking the level of key performers leaving. Managers should consider retention as an integral part of business success and survival. Treating retention as an on-going priority may enable the manager to focus on hands-on measures to sustain long term commitment of key employees, rather than reacting after a surprise resignation is made.

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## ANNEXURE

TABLE 1: TYPES OF ORGANISATIONAL CRISIS

S. No.	Internal	External
1	Bribery	Natural disaster that destroys corporate product or service headquarters
2	Information sabotage	Natural disaster that eliminates key organizational information base stakeholder
3	Workplace bombing	Environmental spill
4	Work-related homicide	Hostile takeover
5	Sabotage by insiders	Societal crises
6	Plant explosion	Terrorism
7	Sexual harassment	Sabotage
8	Computer breakdown	Executive kidnapping
9	Failure to adapt to change	Off-site product tampering
10	Rise in absenteeism	Markets deregulate
11	Communication breakdown	Labour strike

TABLE 2: TYPES AND FREQUENCIES OF CRISES EXPERIENCED BY IT INDUSTRY

Types of Organisational Crises	Mean	Std. Deviation	Frequency of Occurrence of Crisis (in %)				
			1	2	3	4	5
Loss of employees with key skills	3.7455	1.15287	6	6	25	31	32
Mass absenteeism	2.6364	.64577	1	41	54	2	2
Loss due to sudden death etc.	1.7091	.87099	53	27	16	4	0
Failure to IT infrastructure	1.6091	.73066	52	37	9	2	0
Key leadership positions loss	1.5727	.70981	56	32	12	0	0
False rumours	1.5273	.70005	59	29	12	0	0
Adapting to change	1.4364	.69767	65	28	4	3	0
Harassment (caste, creed, colour)	1.4273	.58198	62	34	4	0	0
Information disclose	1.4091	.68128	68	24	5	2	1
Slowdown	1.3909	.54344	64	34	2	0	0
Damaging to hardware/software	1.2727	.48669	74	24	1	1	0
Sexual harassment	1.2727	.52303	76	20	4	0	0
Lack of succession planning	1.2273	.48195	79	18	3	0	0

TABLE 3: ORGANISATIONAL CRISES ARRANGED IN HIGH TO LOW SEQUENCE OF INTENSITY

Types of Organisational Crisis	N	Min	Max	Intensity of crises	
				Mean	Std. Deviation
Loss of employees with key skills	110	1.00	5.00	4.0182	1.10031
Mass absenteeism	110	1.00	5.00	2.6545	0.65576
Loss due to sudden death, etc	110	1.00	4.00	1.8727	0.94925
Key leadership positions loss	110	1.00	5.00	1.8273	0.9941
Harassment (caste, creed, colour)	110	1.00	4.00	1.7727	0.84222
Failure to IT infrastructure	110	1.00	4.00	1.7	0.84103
Adapting to change	110	1.00	4.00	1.6545	0.91307
Damaging to hardware/software	110	1.00	4.00	1.5182	0.90596
Sexual harassment	110	1.00	4.00	1.4909	0.86465
Lack of succession planning	110	1.00	4.00	1.4727	0.90573
Slowdown in the business	110	1.00	4.00	1.4636	0.65912
False rumours	110	1.00	3.00	1.4545	0.61534
Information disclose	110	1.00	4.00	1.4455	0.78502





## EFFECT OF TRAINING IN TEACHING SKILLS ON THE CLASSROOM BEHAVIOUR OF PROSPECTIVE TEACHERS IN RELATION TO THEIR LEVEL OF ASPIRATIONS

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### ABSTRACT

The purpose of this study was to investigate the effect of training of teaching skills on classroom behaviour of prospective teachers in relation to their level of aspirations. The sample taken for the present study were 200 prospective teachers taken from two teacher training colleges using purposive sampling technique having hundred sample each for experimental and controlled group. The sample from both experimental and controlled groups were given the level of aspiration scale and then divided the sample into four groups, with high level of aspiration and low level of aspiration taking the highest and lowest 27% samples each from both the groups as per the Kelly criterion. In this study, pretest-post test design was used. Prospective Teacher's classroom behaviours before they entered the experiment were determined by pre tests by using Flanders interaction analysis technique of both experimental and controlled group. The observations taken through Flanders Interaction Analysis were divided into three main categories i.e. Teacher Talk, Pupil Talk and Silence or confusion and teacher talk was further divided into indirect teacher talk and direct teacher talk. The treatment in the form of practicing of two teaching skills i.e. Skill of Explaining and Probing Questions were given to experimental groups and no such treatment was given to controlled groups. After providing sufficient training to experimental groups, again their classroom behaviour was observed by using Flanders Interaction Analysis Technique as a post tests. It was found that **1:** there was a significant difference between pre test -post test scores of classroom behaviour of prospective teachers belonging to Experimental group with high level of aspiration w.r.t pupil talk, silence/confusion, indirect teacher talk and direct teacher talk. **2:** There was no significant difference between pre test and post scores of teacher talk and direct teacher talk, but had significant difference in classroom behaviour of pre-test and post test scores of pupil talk ratio, silence/confusion and indirect teacher talk of prospective teachers belonging to Experimental group with low level of aspiration. **3:** There was no significant difference between pre test scores of teacher talk ratio, but has significant difference in classroom behaviour of pupil talk ratio and silence/confusion belonging to controlled group with high level of aspiration. **4:** there was no significant difference in classroom behaviour of teacher talk and direct teacher talk and pupil talk except silence/confusion and indirect teacher talk of prospective teachers belonging to Controlled group with low level of aspiration. **5:** there was highly significant difference in classroom behaviour of pupil talk, silence/confusion, indirect teacher talk and direct teacher talk, whereas direct teacher talk of prospective teachers belonging to Experimental and Controlled group with high level of aspiration was not significant. **6.** there was highly significant difference in classroom behaviour of teacher talk, pupil talk ratio, silence/confusion, indirect teacher talk and direct teacher talk, whereas direct teacher talk had not significant difference of prospective teachers belonging to Experimental and Controlled group with low level of aspiration.

### KEYWORDS

Teaching Skills, Flanders Interaction observation, classroom behaviour. High and low level of aspiration.

### INTRODUCTION

Teachers are the most expensive inputs of the instructional system. It is when there are calibre of professional teachers who have good educational background and relevant teaching skills and attitude that educational aims and objectives can be realized. There is need for highly competent teachers for imparting knowledge. Before teachers can face the challenges of teaching, they need capability to perform their task efficiently. It is important for them to acquire requisite competencies for discharging of their duties. Only the competent, professionally skilled, vibrant and well-coordinated teachers can meet the challenges of educational crises that have bedevilled education sector. (Rao, 2007)

Onocha (2013) posited that teachers must be well informed and highly resourceful to meet the demand of teaching profession. Therefore, there is need for quality training that can enhance effectiveness which can only be acquired through teacher education program. He referred to teacher education or preparation as the policies and procedures that are designed to equip teacher trainees with the knowledge, skills, values, habits, attitudes, behaviors and skills they need for effective performance of their duties. Proper practice is necessary for teacher training programs. Obayan (2004) opined that teachers are not expected to have only the knowledge of the subject matter but be well equipped with enough teaching skills. In fact, Asiabaka and Emanalo (2011) argued that teachers training institutions that post student teachers to schools of practice for teaching practice when they have not been exposed to skills' acquisition through microteaching have no moral justification.

Teaching skills are those "micro-behaviours" that the effective teacher constantly exhibits when teaching a class. They include behaviours like:

- involving all pupils in the lesson
- using differentiation appropriately to challenge all pupils in the class
- using a variety of activities or learning methods
- applying teaching methods appropriate to the national curriculum objectives
- Using a variety of questioning techniques to probe pupils' knowledge and understanding.

(McBer, 2000)

Teaching is not a single skill but is a composite one. Various skills are required by the teacher to make his teaching effective. Teaching is a complex process because it deals with human behavior which is in itself very dynamic in nature. The teaching process becomes complex when a teacher desires to be an effective teacher and the whole process of teaching and learning result oriented. To achieve this teacher needs to inculcate abilities and skills which will make his teaching effective. The complex process of teaching can be divided into various components that are simple, and defined. These components are called teaching skills which can be identified, practiced, evaluated, controlled and acquired through training. (Pallath, Nov. 2012).

According to Gage (1968): Teaching skills are specific instructional activities and procedures that a teacher may use in his classroom. These are related to the various stages of teaching or in the continuous flow of the teacher performance.

Kumar (2008) explained the meaning of teaching skills which refer to the arts and behaviour that facilitate maximally learners 'learning either directly or indirectly. Teaching skills make the teachers and learners' communication and interaction to be adequate, sufficient and result oriented.

### TYPES OF TEACHING SKILLS

Allen and Ryan (1976) listed the following teaching skills at Stanford University in the U.S.A.

1. Stimulus Variation
2. Set induction
3. Closure
4. Teacher silence and non-verbal cues
5. Reinforcing pupil participation
6. Fluency in questioning
7. Probing questions
8. Use of higher questions
9. Divergent questions
10. Recognizing and attending behaviour
11. Illustrating and use of examples
12. Lecturing
13. Planned repetition
14. Completeness of communication

The most common skills which are to be practiced were the skill of questioning and the skill of explaining.



**THE SKILL OF PROBING QUESTIONS**

Probing questions are those which help the pupils to think in depth about the various aspects of the problem. By asking such questions again, the teacher makes the pupils more thoughtful. He enables the pupils to understand the subject deeply (Pallath, 2010). The skill of probing questions may be defined as the art of response management. It comprises of a set of techniques used for going deep into pupil's responses in order to have the desired responses. Here the emphasis is laid on the ways and means of response management. So this skill is also named as the skill of response management (Sachdeva, 2000).

**THE SKILL OF EXPLAINING**

In every subject, there are some topics which need less explanation by the teacher and there are few topics which are rather difficult, require more explanation by the teacher. The skill of explaining like other skills can be acquired by the teacher gradually. By taking the help of Micro Teaching, the prospective teacher can plan and teach and if the need arises thereto, he may re-plan and re-teach. Only practice in different situations will help him to have mastery over the skills. (Sachdeva, 2000)

In a classroom, an explanation is a set of interrelated statements made by the teacher related to a phenomenon, an idea etc. in order to bring about or increase understanding in the pupils about it. The teacher should practice more and more of desirable behaviors like using explaining links using beginning and concluding statements and testing pupil understands behaviors like making irrelevant statements, lacking in continuity, using inappropriate vocabulary, lacking in fluency, and using vague words and phrases as far as possible. (Sachdeva, 2000).

The explanation serves two purposes: (1) to introduce the subject by giving some background about its usefulness and application; and (2) to describe the subject in a simple, complete, and tantalizing way. The explanation should create a desire to become proficient in the subject under study. (Sachdeva, 2000)

Microteaching helps teachers improve both content and methods of teaching and develop specific teaching skills such as questioning, the use of examples and simple artifacts to make lessons more interesting. Effective reinforcement techniques, introducing and closing lessons effectively, Immediate, focused feedback method and encouragement, combined with the opportunity to practice the suggested improvements in the same training session, are the foundations of the microteaching protocol (Dwight, and Weiping, 1996). Also, through micro teaching, the teachers' class management skills improve. They acquire the skills to choose appropriate learner activities, use teaching goals, and overcome difficulties encountered during the process. Furthermore, by observing the presentation of their friends they find a chance to observe and evaluate different teaching strategies (Nicholl, 2003).

It is a teacher training technique which helps the teacher trainee to master the teaching skills. It requires the teacher trainee

- To teach a single concept of content.
- Using a specified teaching skill.
- For a short time.
- To a very small number of pupils.

In this way the teacher trainee practices the teaching skill in terms of definable, observable, measurable and controllable form with repeated cycles till he attains mastery in the use of skill (Maheshwari, 2011).

According to Merriam Webster (2013) Micro Teaching is practice teaching in which a student teacher's teaching of a small class for a short time is videotaped for subsequent evaluation.

Micro-teaching involves the following steps :

**Plan → Teach → Feed-back → Re-plan → Re-teach → Re-feedback.**

These steps are repeated till the pupil-teacher attains mastery in the use of the skill.

The details of the steps are as follows:

**1. Plan :** This involves the selection of the topic and related content of such a nature in which the use of components of the skill under practice may be made easily and conveniently. The topic is analyzed into different activities of the teacher and the pupils. The activities are planned in such a logical sequence where maximum application of the components of a skill is possible.

**2. Teach :** This involves the attempts of the teacher trainee to use the components of the skill in suitable situations coming up in the process of teaching-learning as per his/her planning of activities. If the situation is different and not as visualized (in the planning of the activities), the teacher should modify his/her behaviour as per the demand of the situation in the Class. He should have the courage and confidence to handle the situation arising in the class effectively.

**3. Feedback:** This term refers to giving information to the teacher trainee about his performance. The information includes the points of strength as well as weakness relating to his/her performance. This helps the teacher trainee to improve upon his/her performance in the desired direction.

**4. Re-plan :** The teacher trainee replans his lesson incorporating the points of strength and removing the points not skillfully handled during teaching in the previous attempt either on the same topic or on another topic suiting to the teacher trainee for improvement.

**5. Re-teach:** This involves teaching to the same group of pupils if the topic is changed or to a different group of pupils if the topic is the same. This is done to remove boredom or monotony of the pupil. The teacher trainee teaches the class with renewed courage and confidence to perform better than the previous attempt.

**6. Re-feedback:** This is the most important component of Micro-teaching for behaviour modification of teacher trainee in the desired direction in each and every skill practice.

(Ahuja, 2008)

**INTEGRATION OF TEACHING SKILLS**

When mastery has been attained in various skills. The teacher trainee is allowed to teach the skills together. This separate training programme to integrate various isolated skills is known as 'Link Practice'. It helps the trainee to transfer effectively all the skills learnt in the micro teaching sessions. It helps to bridge the gap between training in isolated teaching skills and the real teaching situation faced by a student teacher.

Link practice or integration of skills can be done in two ways:

**Integration in parts** - 3 or 4 teaching skills are integrated and transferred them into a lesson of 15-20 minutes duration. And again 3 or 4 skills are integrated and are transferred all the skills to one lesson.

**Integration as a whole** - Student teacher integrates all the individual teaching skills by taking them as a whole and transferred them into a real teaching situation.

(Sharma, 2011)

According to Can (2009), the more effective the microteaching the better the opportunities for student teachers to develop their teaching skills at their schools of practice, because microteaching serves as training ground for teaching practice.

**CLASSROOM BEHAVIOUR**

The teaching-learning situations in the class-room involve interaction between the teacher and the students. The success of a teacher may be judged through the degree of effectiveness of his teaching which may be objectively assessed through his class-room behavior or interaction. Thus a systematic or objective analysis of the teacher's classroom interaction may provide a reliable assessment of what goes on inside the class-room in terms of teaching and learning.

Every teacher is just like a king/queen in his/ her classroom. What type of climate prevails there in the classroom depends upon the behaviour of the teacher. Teacher behaviour means how a teacher behaves with the students in the classroom, outside the classroom, inside and outside the school/college campus. Different teachers will behave differently in one or the same situation. Teacher's behaviour in the classroom determines how she acts or reacts in different classroom situations. Her behaviour is the reflection of her many qualities and modified with passage of time as she starts gaining experience. Her entry behaviour when she starts preservice training is different and then it gets modified with time.

**FLANDERS' INTERACTION ANALYSIS SYSTEM**

Flanders' system is an observational tool used to classify the verbal behaviour of teachers and pupils as they interact in the classroom. Flanders' instrument was designed for observing only the verbal communication in the classroom and non-verbal gestures are not taken into account.

TABLE 1.1: FLANDERS' INTERACTION ANALYSIS CATEGORIES (FIAC)

TEACHER TALK	
1 Accepts feeling	Indirect Teacher Talk
2 Praises or encourages	
3 Accepts or uses ideas of others	
4 Asks questions	Direct Teacher Talk
5 Lectures	
6 Gives directions	
7 Criticizes or justifies authority	
PUPIL TALK	
8 Pupil talk-responses	Pupil Talk
9 Pupil talk-initiation	
10 Silence or confusion	

Interactions analysis is a label that refers to any technique for studying the classroom events in such a fashion that each event is taken into consideration. The most common technique to do is to observe, by sitting in a classroom or some views a video sound playback event on an observation forum. Then the observer uses his or her system to record and put into different categories. Therefore behaviour modification is a scientific technique, which incorporates structured, preplanned and specific attempts at modifying observable behaviours, primarily by altering the events in the environment.

#### LEVEL OF ASPIRATION

**Markus and Nurius (1986)** have reported aspirations as one's ideas and hopes of "possible selves", i.e., what a person would like to and what would not like to become or achieve. In psychology, aspiration level has been defined as the level of quality of a task which one desires to attain. It is a determinant of an individual's performance level in the future. It has been hypothesized that aspiration level varies from persons to person and place to place and is determined by factors that may change and influence aspirations level during the lifetime.

Every student will have some or the other educational aspirations as it influences the educational or occupational choices and personality. Individuals will have their own aspirations. At all stages of life people try for self enhancement. The aspirations during student period influence their behaviour. An individual's aspiration level represents him not only as he is at any particular moment, but also as he would like to be at some point in the future. It is a measure of his intentional disposition, an important element of his long range behaviour. By knowing a person's level of aspiration, we learn a great deal about him. So it is necessary to have a good knowledge of the aspirational level of an individual, both from educational and from guidance point of view. (**Kalluri, 2007**)

**Sharma (2006)** says that as such each person desires progress and success in terms of his qualifications and capacities and that limit is considered as the level of aspiration of a person which he imagines to reach. Aspiration has a close relationship with one's goal of life because every individual imagines the level of his achievements in a direction, he aims at. This level of aspiration is changing in character and continues to be influenced by time, situation and environment. If an individual achieves more success than his imagined level of achievement, it is then natural that his level of aspiration will go higher. Contrary to this, if he meets with failure in reaching the imagined level of aspiration, then naturally, his level of aspiration will go down. Comparatively, therefore, a person's level of aspiration is generally estimated according to his real efficiency although sometimes it is estimated higher also. Some psychologists are of the view that success or failure affects the level of aspiration and as a result he gets adjusted in time.

**Wikipedia, encyclopedia (2005)** defined Level of aspiration or Locus of control as refers to an individual's generalized expectations concerning where control over subsequent events resides.

**Grantz, (2006)** says that in the context of education, Level of aspiration or locus of control refers to the types of attributions we make for our success and for/or failures in school tasks.

Hence level of aspiration of an individual is that goal which has the largest distance (difference) in utility between it and next lower goal. **Smith (1968)** defines a person's level of aspiration as his immediate goal, something almost within his reach, a possible success near at hand. The level set in fact is a compromise between the desire for success and the desire to avoid failure, the first pushing the level up and the second pulling it down.

#### REVIEW OF RELATED LITERATURE

**Sharma (1986)** in his study concluded that it was preferable to use the standard method of microteaching to teach period for developing probing question skill. Exercise with reinforcement of the probing question skill behaviour was conducive to the growth of a teaching skill. Praising, encouraging, accepting or using pupils' ideas, questioning and lecturing were found to be significantly influenced by microteaching treatments. Incidence of lecturing, the only one among the three direct behaviours, decreased in consequence of the application of microteaching treatment. Microteaching influenced indirect teacher behaviour positively whereas direct teacher behaviour was negatively influenced by microteaching. Pupils talk response was influenced positively by microteaching treatment.

**Sultana (1988)** studied the effect of micro-teaching approach on the behavior modification of pupil teachers of Gorakhpur University. She found that: The skills of introducing a lesson and questioning, probing-questions and experimentation, -each skill having 10 pupil- teachers, were significant, which meant that after getting feedback these teachers changed their behaviours towards teaching during micro- teaching. The skill of reinforcement and increasing pupils' participation was not significant at any level. There was a remarkable change in the behaviour of pupil-teachers of science on the skill of experimentation. Only 41 out of 60 teachers significantly changed their behaviour during the micro-teaching approach. A significant change in behaviour occurred for the female rather than the male pupil-teachers of science. Modification of behaviour occurred for all pupil-teachers of physics, chemistry, biology and mathematics.

**Singh (1990)** conducted a study of the effectiveness of different integration strategies for developing teaching skills among student-teachers. The objectives of the study were to study the effectiveness of different strategies of integration of teaching skills in the development of the general teaching competence of teachers and to compare competence in teaching skills and the classroom verbal behaviour of the student-teachers trained through micro teaching and meso-teaching. He found that the 56 teachers trained through micro teaching only showed the following modification in their classroom behaviours in categories, 'Accepted feelings', 'Praise or encouragement', 'Using pupil's ideas', 'Asking questions', 'Giving directions', and 'Criticising or justifying authority 'Silence' or 'Confusion' was adequately minimized. There was considerable increase in 'Teacher-talk' particularly in 'Indirect-teacher talk' (which changed the ratio of 'Indirect influence' over 'Direct- influence'). The overall behaviour pattern of 'Indirectness' remained, more or less, unchanged.

But no such study was found where prospective teachers were first classified as per their aspiration level before providing microteaching practice to them. because if the person set their goal beforehand then it becomes easy to achieve those goals by focusing on the same. So this is the reason to select this topic by the investigator.

#### STATEMENT OF THE PROBLEM

EFFECT OF TRAINING IN TEACHING SKILLS ON THE CLASSROOM BEHAVIOUR OF PROSPECTIVE TEACHERS IN RELATION TO THEIR LEVEL OF ASPIRATIONS

#### OBJECTIVES OF THE STUDY

- To classify the prospective teachers in the category of high and low aspiration level.
- To give practice to the prospective teachers in the skill of probing questions and explaining.
- To study the effect of teaching skills on classroom behaviour of prospective teachers of experimental group with high and low level of aspiration.

- To compare the effect of teaching skills on the classroom behaviour of prospective teachers of experimental and controlled groups in relation to their level of aspiration

## HYPOTHESES

**Ho 1:** There is no significant difference between pre test -post test scores of classroom behavior of prospective teachers belonging to Experimental group with high level of aspiration

**Ho 2:** There is no significant difference between pre test -post test scores of classroom behavior of prospective teachers belonging to Experimental group with low level of aspiration.

**Ho 3:** There is no significant difference between pre test -post test scores of classroom behavior of prospective teachers belonging to Controlled group with high level of aspiration.

**Ho 4:** There is no significant difference between pre test -post test scores of classroom behavior of prospective teachers belonging to Controlled group with low level of aspiration.

**Ho 5:** There is no significant difference between classroom behavior of prospective teachers belonging to Experimental and Controlled group with high level of aspiration.

**Ho 6:** There is no significant difference between classroom behavior of prospective teachers belonging to Experimental and Controlled group with low level of aspiration.

## RESEARCH METHODOLOGY

The present study entitled "Effect of Training in Teaching Skills on the classroom behaviour of prospective Teachers in relation to their level of aspirations" was an experimental study in nature. For conducting the experiment a simple pre test-post test design was applied in which pre and post treatment observations were recorded on classroom behaviour by using the Flanders Interaction Analysis Technique.

The research was carried out on prospective teachers to check the effect of teaching skills on classroom behaviour in relation to their level of aspirations. It was an experimental study. For conducting the experiment, the investigator had divided the whole sample of 200 students into two groups that is Experimental and Controlled groups of equal proportion and employed the sample for pre-test and post- test treatment. Sample of 200 prospective teachers were drawn from the two education colleges of Punjab (Distt. Mohali) having 100 from each college. Since level of aspiration was a classifying variable, so prospective teachers were classified into high and low aspiration level group. The sample for experimental and controlled group was selected purposively by the investigator from two Education Colleges. Prospective teachers selected from one college were considered as controlled group and others as experimental group. The sample from both experimental and controlled groups were given the level of aspiration scale and then divided the sample into four groups, with high level of aspiration and low level of aspiration taking the highest and lowest 27% samples each from both the groups as per the Kelly criterion. Experimental and Controlled groups with

- High Aspiration Level and Low Aspiration Level

The total number of groups for this study was four. In the pre test stage, classroom observations were coded on 10x10 matrix response sheets by using Flanders Interaction Analysis Categories for all prospective teachers during the first teaching practice and then decoding was done on the basis of classroom observations through the technique of Flanders Interaction Analysis Technique for each of Experimental and Controlled group. Interpretation and Analysis was done by calculating the classroom behaviour of prospective teachers in terms of Teachers Talk Ratio, Indirect teacher talk ratio, direct teacher talk ratio, Pupils Talk Ratio and Silence/Confusion ratio. Then sufficient practice in two micro skills i.e. Skill of Probing Questions and skill of Explaining were provided to Experimental group only. After practice session of Micro Skills, Classroom Observations were again coded in 10X10 matrix and further decoding was done during Second Teaching Practice Session by using the same techniques.

The pre and post testing was done exactly on the same pattern for controlled group also. General instructions regarding micro teaching practice were given to this group theoretically but the treatment of practicing micro teaching skills was not provided to this group.

't' test was computed in order to find out significant differences observed between pre- test and post- test scores of all the four groups as mentioned above of both Controlled and Experimental groups.

## SAMPLE

### 1. COLLEGE SAMPLE

College sample in the present investigation consisted of two Teacher Training Colleges of Education selected purposely

### 2. SAMPLE OF PROSPECTIVE TEACHERS

The sample for the present study consisted of two hundred prospective teachers. They were drawn from two B.Ed training colleges which were selected through purposive sampling. As both the colleges had 100 seats each so all the students of these colleges were taken for the study.

### 3. THE SCHOOL SAMPLE

The sample of prospective teachers was practicing in different government and government aided schools. All the schools (5-6 schools from each college) were selected for pre test-post test treatment observations because the entire sample was distributed in these schools.

## TOOLS USED

The following tools were used to conduct the present study:-

- Level of aspiration test by Bhargava and Shah (1996).
- Flanders Interaction Analysis Technique by Flanders (1956) was applied to all prospective teachers twice. i.e.
- Before giving the treatment.
- After giving the treatment.
- Treatment was given to Experimental group prospective teachers for two microteaching skills given for at least two and half months approximately (3-4 micro lessons for each skill).
- Skill of probing Questions
- Skill of Explaining

t-test was used to calculate the differences among different groups of teaching aptitude and level of aspiration of both experimental and controlled groups.

## DISCUSSION OF THE RESULT

**HYPOTHESIS 1:** There is no significant difference between pre test -post test scores of classroom behavior of prospective teachers belonging to Experimental group with high level of aspiration.

TABLE 1: MEAN DIFFERENTIALS BETWEEN PRE AND POST TEST SCORES OF FLANDERS OBSERVATIONS WITH HIGH ASPIRATION OF EXPERIMENTAL GROUP

Groups	N	Mean	Std. Deviation	Std. Error Mean	T ratio	df	Sig(2-tailed)
*TTR pr - TTR po	27	-6.00	16.39	3.15	-1.903	26	.068
**PTR pr - PTR po	27	-13.70	23.76	4.57	-2.996	26	.006
***SIL/CON pr - SIL/CON po	27	20.00	26.47	5.09	3.926	26	.001
****ITTR pr - ITTR po	27	-20.37	20.33	3.91	-5.205	26	.000
*****DTTR pr - DTTR po	27	15.85	21.99	4.23	3.746	26	.001

\*TTR pr-TTR po: pre test-post test teacher talk ratio

\*\*PTR pr-PTR po: pre test-post test pupil talk ratio

\*\*\*Sil/Con pr-Sil/Con po: pre test-post test pupil talk ratio

\*\*\*\*ITTR pr - ITTR po: pre test-post test Indirect teacher talk ratio

\*\*\*\*\*DTTR pr - DTTR po: pre test-post test direct teacher talk ratio

The perusal of table 1 shows the t value for significance of difference between mean scores of teacher talk ratio, pupil talk ratio, silence/confusion ratio, indirect teacher talk ratio and direct teacher talk ratio of prospective secondary school teachers was computed to be -1.903, -2.996, 3.926, -5.205 and 3.746 which is significant at 0.05 and 0.01 level of confidence except teacher talk ratio. This implies that practicing of teaching skills by prospective teachers with high level of aspiration showed great impact on them. This shows that if prospective teachers set their goal high and do their efforts wholeheartedly then they can easily achieve their aims. Hence the hypothesis that there is no significant difference between pre test -post test scores of classroom behaviour of prospective teachers belonging to Experimental group with high level of aspiration was rejected.

**HYPOTHESIS 2: There is no significant difference between pre test -post test scores of classroom behavior of prospective teachers belonging to Experimental group with low level of aspiration**

TABLE 2: MEAN DIFFERENTIALS BETWEEN PRE TEST AND POST TEST SCORES OF FLANDERS OBSERVATIONS WITH LOW ASPIRATION OF EXPERIMENTAL GROUP

Groups	N	Mean	Std. Deviation	Std. Error Mean	T ratio	Df	Sig. (2-tailed)
TTR pr - TTR po	27	-7.48	21.38	4.12	-1.82	26	.081
PTR pr - PTR po	27	-9.33	21.64	4.16	-2.24	26	.034
SIL/CON pr - SIL/CON po	27	16.81	21.78	4.19	4.01	26	.000
ITTR pr - ITTR po	27	-14.04	19.87	3.82	-3.67	26	.001
DTTR pr - DTTR po	27	6.56	25.77	4.96	1.32	26	.198

The perusal of table 2 shows the t value for significance of difference between mean scores of teacher talk ratio, pupil talk ratio, silence/confusion ratio, indirect teacher talk ratio and direct teacher talk ratio of prospective secondary school teachers came out to be -1.82, -2.24, 4.01, -3.67 and 1.32 which is significant at 0.05 and 0.01 level of confidence on three dimensions of pupil talk ratio, silence/confusion ratio, indirect teacher talk ratio. This implies that practicing of teaching skills by prospective teachers with low level of aspiration showed a slightly impact on them. Hence the hypothesis that there is no significant difference between pre tests -post test scores of classroom behaviour of prospective teachers belonging to Experimental group with low level of aspiration was partially rejected.

**HYPOTHESIS:3 There is no significant difference between pre test -post test scores of classroom behavior of prospective teachers belonging to Controlled group with high level of aspiration**

TABLE 3: MEAN DIFFERENTIALS BETWEEN PRE AND POST TEST SCORES OF FLANDERS OBSERVATIONS WITH HIGH ASPIRATION OF CONTROLLED GROUP

Groups	N	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
TTR pr - TTR po	27	2.63	24.50	4.72	.558	26	.582
PTR pr - PTR po	27	6.81	16.39	3.15	2.16	26	.040
SIL/CON pr - SIL/CON po	27	-11.63	23.59	4.54	-2.56	26	.017
ITTR pr - ITTR po	27	7.37	19.37	3.73	1.97	26	.059
DTTR pr - DTTR po	27	-4.74	24.28	4.67	-1.01	26	.320

Table 3 shows the t values of various dimensions of classroom behaviour of prospective teachers w.r.t teacher talk ratio, pupil talk ratio, silence/confusion, indirect teacher talk and direct teacher talk ratio are .558, 2.16, -2.56, 1.97 and -1.01 respectively which showed that calculated t values of critical value that is 2.14 at 0.05 and 2.98 at 0.01 means there is no significant difference in classroom behavior of these aspects at 0.05 and 0.01 except pupil talk ratio and silence/confusion which is significant at 0.05. Hence the hypothesis there is no significant difference between pre test -post test scores of classroom behaviour of prospective teachers belonging to Controlled group with high level of aspiration is partially rejected.

**HYPOTHESIS 4: There is no significant difference between pre test -post test scores of classroom behavior of prospective teachers belonging to Controlled group with low level of aspiration**

TABLE 4: MEAN DIFFERENTIALS BETWEEN PRE AND POST TEST SCORES OF FLANDERS OBSERVATIONS WITH LOW ASPIRATION OF CONTROLLED GROUP

Groups	N	Mean	Std. Deviation	Std. Error Mean	T	Df	Sig. (2-tailed)
TTR pr - TTR po	27	5.74	24.69	4.75	1.21	26	.238
PTR pr - PTR po	27	3.67	20.87	4.02	.91	26	.370
SIL/CON pr - SIL/CON po	27	-12.19	26.29	5.06	-2.41	26	.023
ITTR pr - ITTR po	27	11.37	22.22	4.28	2.66	26	.013
DTTR pr - DTTR po	27	-5.63	27.78	5.35	-1.05	26	.302

Table 4 shows the t values of various dimensions of classroom behaviour of prospective teachers w.r.t teacher talk ratio, pupil talk ratio, silence/confusion, indirect teacher talk and direct teacher talk ratio are 1.21, .91, -2.41, 2.66, and -1.05 respectively which showed that calculated t values of critical value that is



2.14 at 0.05 and 2.98 at 0.01 means there is no significant difference in classroom behaviour of these aspects at 0.05 and 0.01 except silence/confusion and indirect teacher talk ratio which is significant at 0.05. Hence the hypothesis there is no significant difference between pre tests -post test scores of classroom behaviour of prospective teachers belonging to Controlled group with low level of aspiration is almost rejected.

**HYPOTHESIS 5: There is no significant difference between classroom behaviour of prospective teachers belonging to Experimental and Controlled group with high level of aspiration**

**TABLE 5: MEAN DIFFERENTIALS BETWEEN THE SCORES OF HIGH LEVEL OF ASPIRATION BELONGING TO CONTROLLED AND EXPERIMENTAL GROUP**

	GROUP	N	Mean	Std. Deviation	Std. Error Mean	T	Df	Sig. (2-tailed)
Teacher talk ratio	EXP-GROUP	27	-6.00	16.38	3.15	-1.52	52	.134
	CONT- GROUP	27	2.62	24.50	4.71			
Pupil talk ratio	EXP-GROUP	27	-13.70	23.76	4.57	-3.69	52	.001**
	CONT- GROUP	27	6.81	16.38	3.15			
Silence/Confusion	EXP-GROUP	27	-40.40	13.68	2.63	6.65	52	<.001**
	CONT- GROUP	27	-70.37	18.99	3.65			
Indirect Teacher Talk ratio	EXP-GROUP	27	-20.37	20.33	3.91	-5.13	52	<.001**
	CONT- GROUP	27	7.37	19.36	3.73			
Direct teacher talk ratio	EXP-GROUP	27	15.85	21.98	4.23	3.27	52	.002**
	CONT- GROUP	27	-4.74	24.28	4.67			

table 5 reveal that mean differentials scores belonging to Experimental and Controlled group with high level of aspiration regard to classroom behavior w.r.t teacher talk, pupil talk, and silence/confusion, indirect teacher talk, and direct teacher talk were -1.52, -3.69, 6.65, -5.13 and 3.27 respectively which showed that calculated t values of pupil talk ratio, silence/confusion, indirect teacher talk and direct teacher talk were more than critical value which is 2.06 at 0.05 and 2.79 at 0.01 means there is highly significant difference in classroom behavior of these aspect, whereas direct teacher talk ratio has value less than critical value hence not significant difference in this aspect. Hence the hypothesis that there is no significant difference between classroom behaviour of prospective teachers belonging to Experimental and Controlled group with high level of aspiration is almost rejected.

**HYPOTHESIS 6: There is no significant difference between classroom behaviour of prospective teachers belonging to Experimental and Controlled group with low level of aspiration**

**TABLE 6: MEAN DIFFERENTIALS BETWEEN THE SCORES OF LOW LEVEL OF ASPIRATION BELONGING TO CONTROLLED AND EXPERIMENTAL GROUP**

	GROUP	N	Mean	Std. Deviation	Std. Error Mean	T ratio	df	Level of sign
Teacher talk ratio	EXP-GROUP	27	-7.48	21.38	4.11	-2.10	52	.040*
	CONT- GROUP	27	5.74	24.69	4.75			
Pupil talk ratio	EXP-GROUP	27	-9.33	21.63	4.164	-2.25	52	.029*
	CONT- GROUP	27	3.67	20.87	4.02			
Silence/Confusion	EXP-GROUP	27	-38.00	17.16	3.30	5.29	52	<.001**
	CONT- GROUP	27	-65.07	20.32	3.90			
Indirect Teacher Talk ratio	EXP-GROUP	27	-14.04	19.87	3.82	-4.43	52	<.001**
	CONT- GROUP	27	11.37	22.22	4.28			
Direct teacher talk ratio	EXP-GROUP	27	6.56	25.77	4.96	1.67	52	.101
	CONT- GROUP	27	-5.63	27.78	5.34			

Table 6 reveals that mean differentials scores belonging to Experimental and Controlled group with low level of aspiration regard to classroom behavior w.r.t teacher talk, pupil talk, and silence/confusion, indirect teacher talk, and direct teacher talk were -2.10, -2.25, 5.29, -4.43 and 1.67 respectively which showed that calculated t values of teacher talk, pupil talk ratio, silence/confusion, indirect teacher talk and direct teacher talk were more than critical value which is 2.06 at 0.05 and 2.79 at 0.01 means there is highly significant difference in classroom behavior of these aspect at 0.05 and silence and indirect teacher talk is significant at 0.01, whereas direct teacher talk ratio has value less than critical value hence not significant difference in this aspect. Hence the hypothesis that there is no significant difference between classroom behaviour of prospective teachers belonging to Experimental and Controlled group with low level of aspiration is almost rejected.

## FINDINGS OF THE STUDY

1. There was a significant difference between pre test -post test scores of classroom behaviour of prospective teachers belonging to Experimental group with high level of aspiration w.r.t pupil talk, silence/confusion, indirect teacher talk and direct teacher talk.
2. There was no significant difference between pre test and post scores of teacher talk and direct teacher talk, but had significant difference in classroom behaviour of pre-test and post test scores of pupil talk ratio, silence/confusion and indirect teacher talk of prospective teachers belonging to Experimental group with low level of aspiration.
3. There was no significant difference between pre test scores of teacher talk ratio, but has significant difference in classroom behaviour of pupil talk ratio and silence/confusion belonging to controlled group with high level of aspiration.
4. There was no significant difference in classroom behaviour of teacher talk and direct teacher talk and pupil talk except silence/confusion and indirect teacher talk of prospective teachers belonging to Controlled group with low level of aspiration.
5. There was highly significant difference in classroom behaviour of pupil talk, silence/confusion, indirect teacher talk and direct teacher talk, whereas direct teacher talk of prospective teachers belonging to Experimental and Controlled group with high level of aspiration was not significant.
6. There was highly significant difference in classroom behaviour of teacher talk, pupil talk ratio, silence/confusion, indirect teacher talk and direct teacher talk, whereas direct teacher talk had not significant difference of prospective teachers belonging to Experimental and Controlled group with low level of aspiration.



## CONCLUSION

Microteaching makes student teachers to apply in practice what they learned theoretically. The researcher concluded from this study that microteaching is an effective technique of training teachers especially in teaching skill acquisition. She also found out that if the prospective teachers has high aspirations to become an effective and vibrant teacher then he/she will do all his/her efforts to achieve this goal. Prospective teachers who are the main target of this study and who are directly connected with the study will afford the opportunity to master the skills inherent in teaching by setting their goals in advance and give their best in achieving the same. It is also essential to investigate the impacts microteaching skills have on the performance of pre-service teachers so as to improve on the organization of microteaching. Prospective teachers will get great benefits with the practicing of microteaching skills and the roles of each skill in preparing professional, effective, reflective, visionary and vibrant teachers.

## DELIMITATIONS OF THE STUDY

The present study had the following delimitations.

- Only two hundred prospective teachers were selected for the present study.
- Only two teaching skills were selected for this study i.e. the skill of probing questions and the skill of explanation.
- Only two Education (B.Ed) colleges of Punjab, Distt Mohali were selected for the study.

The scope of present study had been delimited in respect of sample used, the variables, tools employed to measure the variables and statistical techniques for analysis. The area of study was restricted to Punjab Distt Mohali only.

## SCOPE FOR FURTHER STUDY

- More teaching skills can be taken for training.
- Sample can be increased.
- Other classifying variables can be taken instead of level of aspiration.
- Sample can be further divided on the basis of sex, teaching subjects etc.
- level of aspiration can be taken as dependent variables instead of classifying variable.
- Number of B.Ed colleges can be increased.

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**STUDY ON PROFITABILITY IN NEW GENERATION PRIVATE SECTOR BANK IN INDIA**

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**ABSTRACT**

*In the present study it is established that the profitability position of new generation private sector bank in India with respected Spread to Total Deposit Ratio, Spread to Total Income Ratio, Interest earned to Working Fund Ratio, Interest Paid to Working Fund Ratio for Kotak Mahindra Bank and Axis Bank are better than other banks in the segment of New Generation Private Sector Banks operating in India therefore the other banks in new generation private sector banks are to improve their the profitability position.*

**KEYWORDS**

private sector banks, profitability.

**INTRODUCTION**

Bank is an institution which deals with money and credit. It accepts deposits from the public, makes the funds available to those who need them and helps in the remittance of money from one place to another. In India till the eighties, the banks operated in a protected environment characterized by administered interest rates, high levels of pre-emption in the form of reserve requirements and directed credit. Financial and banking sector reforms were initiated in India in 1991 with the report of a committee on the financial system headed by M. Narsimham, against the backdrop of challenges faced by the Indian banks, from within and outside the banking system in the country as well as forces of globalization operating worldwide. As a result of financial reforms, there has been a shift in the focus from quantitative to qualitative growth. The accent of the reform process was to improve productivity and efficiency of the financial system and to provide a highly competitive environment for different bank group i.e. new generation private sector banks, old private banks, public sector banks and foreign banks, which are working in India. The banking industry has undergone rapid changes, followed by a series of fundamental developments. Significant among them are the advancements in information technology as well as the communication system these have changed the very concept of "Class Banking" to "Mass Banking." All these changes have caused pressure on their productivity, organizational efficiency and quality of customer services. Thus, there is a tremendous scope for Indian banks to enhance their competitiveness among different segments.

**PRIVATE SECTOR BANKS**

The banks, which came in operation after 1991, with the introduction of economic reforms and financial sector reforms are called "new private-sector banks". Banking regulation act was then amended in 1993, which permitted the entry of new private-sector banks in the Indian banking sector. However, there were certain criteria set for the establishment of the new private-sector banks, some of those criteria being:

- The bank should have a minimum net worth of Rs. 200 crores.
- The promoters holding should be a minimum of 25% of the paid-up capital.
- Within 3 years of the starting of the operations, the bank should offer shares to public and their net worth must increased to 300 crores.

**STATEMENT OF THE PROBLEM**

The examination of financial performance in Banking has important public policy implications in the Indian context due to the following facts: Firstly, the principle aim is to achieve a more competitive and efficient financial system. The Banking industry is a vital part of the financial system in any country. Thus, its success or failure is strongly affecting the health of the economy<sup>1</sup>. Secondly it is interesting to study the determinants of financial performance, as it is extremely useful for managers in improving organizational performance and it also help the policy-making bodies create, if needed, an appropriate regulatory environment. Lastly, despite the importance of financial performance studies, the literature on performance on New Generation Private Sector Indian Banking does not exist. So a great work is needed on measuring and comparing the financial performance of New Generation Private Sector Banks in India.

**OBJECTIVES OF THE STUDY**

To study the profitability of New Generation Private Sector Banks in India

**RESEARCH METHODOLOGY****SCOPE OF STUDY**

This study covers all New Generation Private Sector Banks functioning in India during the period of March 2012 namely Axis Bank Ltd (AXIS), Development Credit Bank Ltd (DCB), HDFC Bank Ltd (HDFC), ICICI Bank Ltd (ICICI), Indusind Bank Ltd (Indusind), Kotak Mahindra Bank, (KOTAK) and Yes Bank Ltd, (YES).

**PERIOD OF THE STUDY**

The study period is twelve years i.e. from 2000-2001 to 2011-2012

**SOURCE OF DATA**

The study is based on the secondary data collected from the IBA Bulletin, Annual issue And Monthly issues, Statistical Table Relating to the Bank in India, and the Reserve Bank of India monthly Bulletin and Annual Report of Respective Banks

**STATISTICAL TOOLS**

For the analysis of the data, various statistical tools and techniques like Average (Mean), Standard deviation (STD), Coefficient of Variation (CV), Compound Annual Growth Rate (CAGR), Maximum and Minimum, One Way Anova, Duncan analysis are used in this study, Comparative analysis and deep study are done and at last results are received to arrive at the conclusions.

<sup>1</sup> Ahmed Arif Almazari (2011), "Financial Performance Evaluation of Some Selected Jordanian Commercial Banks" International Research Journal of Finance and Economics ,ISSN 1450-2887 Issue 68,P4

## RESULTS AND DISCUSSIONS

In the section, some importance ratio are used to analyze the profitability of new generation private sector bank in India. The following selection ratio are used in the study Spread to Total Deposit Ratio, Spread to Total Income Ratio, Interest Earned to Working Fund Ratio, Interest Paid to Working Fund Ratio.

### SPREAD TO TOTAL DEPOSIT RATIO

Spread denotes the difference between interest paid and interest received and total deposit includes savings account, current deposit and fixed deposit. Deposits form the basis for the main banking activity namely lending and advancing. Spread, as a percentage of total deposit of the bank can express the extent the bank had effectively utilized deposits and ultimately in making profit. This ratio is calculated with the help of the following formula

$$\text{Spread to Total Deposit Ratio} = \frac{\text{Spread}}{\text{Total Deposit}} \times 100$$

It is showed that from the table 9 It was found and conclude that the Average Spread to Total Deposit Ratio of New Generation Private Sector Bank in India during the study period and it was ranged between 9.67 Per cent in case of Kotak Mahindra Bank to 2.58 Per cent in case of IndusInd Bank. The standard deviation ranged between 9.65 Per cent in case of Kotak Mahindra to 0.38 Per cent in case of Yes Bank.

It was found that in Kotak Mahindra Bank the co-efficient of variation of Spread to Total Deposit Ratio was high about 99.83 Per cent and in Yes Bank Spread to Total Deposit Ratio found low about 13.71 Per cent. It shows that Spread to Total Deposit Ratio in Yes Bank is more stable and consistent during the study period.

The Compound Annual Growth Rate during the study period found high in case of Axis Bank is about 10.66 Per cent and low in case of IndusInd Bank about -15.9 Per cent. With respected Spread to Total Deposit Ratio it was found that among New Generation Private Sector Banks the Kotak Mahindra Bank found to good compare to other New Generation Private Sector Bank in India.

To find the signification difference between the New Generation Private Sector Bank in India with respect to Spared to Total Deposited ratio during the study period Anova test was further used and presented in the following table:

### ANOVA

TABLE NO. 1: ANOVA FOR SPARED TO TOTAL DEPOSIT

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	405.767	6	67.628	5.117	.000
Within Groups	938.295	71	13.215		
Total	1344.062	77			

Source: computed by the researcher using table no 9

It was found from the table 1 that the "F" value of Spared to Total Deposited ratio of New Generation Private Sector Bank in India showed 5.117 and the significant at 5 per cent level is ".000". It was found that the significant value is less than 0.05; hence it was conclude that there is significant difference between the Banks with respect to Spared to Total Deposited ratio. Therefore to find the significant sample units with respect to Spared to Total Deposited ratio the Duncan Analysis is applied on the New Generation Private Sector Bank in India to identify the mean difference microscopically.

TABLE NO. 2: DUNCAN ANALYSIS FOR SPARED TO TOTAL DEPOSIT

BANK NAMES	N	Subset for alpha = 0.05	
		1	2
INDUSIND	12	2.5780	
AXIS	12	2.6375	
DCB	12	2.7533	
YES BANK	8	2.7932	
ICICI	12	3.1375	
HDFC	12	3.6400	
KOTAK MAHIDRA	10		9.6720
Sig.		.559	1.000

Means for groups in homogeneous subsets are displayed.  
Source, computed by the researcher using table no 9

It was found from the Duncan analysis that the Kotak Mahindra Bank has major signification difference with respect to Spared to Total Deposited ratio among the New Generation Private Sector Bank in India.

### SPREAD TO TOTAL INCOME RATIO

Spread as a percentage of total income would reveal the relationship between the net income from banking operation and the total income of the bank. Total income comprises of interest income and non interest income of the banks. Interest income included interest on advances and the interest income from investments and discount earned from dealing with bills of exchange. Spread to total income is calculated with the help of following formula.

$$\text{Spread to Total Income} = \frac{\text{Spread}}{\text{Total Income}} \times 100$$

It was found from the table -10 It was found and conclude that the Average Spread to Total Income ratio of New Generation Private Sector Bank in India during the study period was ranged between 41.67 Per cent in case of Kotak Mahindra Bank to 22 Per cent in case of IndusInd Bank. The standard deviation ranged between 22.18 Per cent in case of HDFC Bank to 3.88 Per cent in case of Kotak Mahindra Bank

It was found that in HDFC Bank the co-efficient of variation of Spread to Total Income ratio was high about 74.25 Per cent and in Kotak Mahindra Bank Spread to Total Income ratio found low about 9.31 Per cent. It shows that Spread to Total Income ratio in Kotak Mahindra Bank is more stable and consistent during the study period.

The Compound Annual Growth Rate during the study period found high in case of Axis Bank is about 9.99 Per cent and low in case of Kotak Mahindra Bank about -6.2 Per cent. With respected Spread to Total Income ratio it was found that among New Generation Private Sector Bank Kotak Mahindra Bank found good compare to other New Generation Private Sector Bank in India.

To find the signification difference between the New Generation Private Sector Bank in India with respect to Spared to Total Income ratio during the study period Anova test was further used and presented in the following table:

## ANOVA

TABLE NO. 3: ANOVA FOR SPARED TO TOTAL INCOME

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3071.787	6	511.964	4.948	.000
Within Groups	7346.854	71	103.477		
Total	10418.640	77			

Source: computed by the researcher using table no10

It was found from the table 1 that the "F" value of Spared to Total Income ratio of New Generation Private Sector Bank in India showed 4.948 and the significant at 5 per cent level is ".000". It was found that the significant value is less than 0.05; hence it was conclude that there is significant difference between the Banks with respect to Spared to Total Income ratio. Therefore to find the significant sample units with respect to Spared to Total Income ratio the Duncan Analysis is applied on the New Generation Private Sector Bank in India to identify the mean difference microscopically.

TABLE NO. 4: DUNCAN ANALYSIS FOR SPARED TO TOTAL INCOME

BANK NAMES	N	Subset for alpha = 0.05	
		1	2
INDUSIND	12	22.0033	
ICICI	12	22.1117	
DCB	12	22.9742	
AXIS	12	25.4192	
YES BANK	8	25.7338	
HDFC	12	29.8625	
KOTAK MAHIDRA	10		41.6720
Sig.		.119	1.000
Means for groups in homogeneous subsets are displayed. Source, computed by the researcher using table no 10			

It was found from the Duncan analysis that the Kotak Mahindra Bank has major signification difference with respect to Spared to Total Income ratio among the New Generation Private Sector Bank in India.

**INTEREST EARNED TO WORKING FUND RATIO**

Interests earned relate to fund based income and represents the earnings from pure banking business. The major components of interest earned consist of interest on loans and advances granted and discount earned. It relates to deployment or utilization of working funds for earning profit. This ratio is calculated with the help of the following formula

$$\text{Interest Earned to Working Fund} = \frac{\text{Interest Earned}}{\text{Working Fund}} \times 100$$

As is evident from the Table -11 It was found and conclude that the Average Interest earned to Working Fund Ratio of New Generation Private Sector Bank in India during the study period was ranged between 177.8 Per cent in case of Axis Bank to 66.24 Per cent in case of Kotak Mahindra Bank. The standard deviation ranged between 173.8 Per cent in case of Axis Bank to 15.52 Per cent in case of IndusInd Bank

It was found that in Axis Bank the co-efficient of variation of Interest earned to Working Fund Ratio was high about 97.76 Per cent and in IndusInd Bank Interest earned to Working Fund Ratio found low about 12.29 Per cent. It shows that Interest earned to Working Fund Ratio in IndusInd Bank is more stable and consistent during the study period.

The Compound Annual Growth Rate during the study period found high in case of Yes Bank is about 33 Per cent and low in case of Axis Bank about -8.9 Per cent. With respected Interest earned to Working Fund Ratio it was found that among New Generation Private Sector Bank in Axis Bank found good compare to other New Generation Private Sector Bank in India.

To find the signification difference between the New Generation Private Sector Bank in India with respect to Interest Earned to Working Fund ratio during the study period Anova test was further used and presented in the following table:

TABLE NO. 5: ANOVA FOR INTEREST EARNED TO WORKING FUND

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	103179.652	6	17196.609	3.285	.007
Within Groups	371713.548	71	5235.402		
Total	474893.199	77			

Source: computed by the researcher using table no 11

It was found from the table 1 that the "F" value of Interest Earned to Working Fund ratio of New Generation Private Sector Bank in India showed 3.285 and the significant at 5 per cent level is ".007". It was found that the significant value is less than 0.05; hence it was conclude that there is significant difference between the Banks with respect to Interest Earned to Working Fund ratio. Therefore to find the significant sample units with respect to Interest Earned to Working Fund ratio the Duncan Analysis is applied on the New Generation Private Sector Bank in India to identify the mean difference microscopically.

TABLE NO. 6: DUNCAN ANALYSIS FOR INTEREST EARNED TO WORKING FUND

BANK NAMES	N	Subset for alpha = 0.05	
		1	2
KOTAK MAHIDRA	10	66.2410	
ICICI	12	72.7000	
YES BANK	8	82.7450	
HDFC	12	92.8642	
DCB	12	115.0667	115.0667
INDUSIND	12	126.2767	126.2767
AXIS	12		177.7725
Sig.		.094	.059
Means for groups in homogeneous subsets are displayed. Source, computed by the researcher using table no 11			

It was found from the Duncan analysis that the Axis Bank has major signification difference with respect to Interest Earned to Working Fund ratio among the New Generation Private Sector Bank in India.

#### INTEREST PAID TO WORKING FUND RATIO

Interest expenditure is a fund based expenditure and represents the cost of funds for the banks. The major items of interest expenditure consist of interest paid on deposits and interest paid on borrowings. It is an indicator of the rate at which a bank incurs expenditure towards the usage of outside funds. This ratio is calculated with the help of the following formula

$$\text{Interest Paid to Working Fund} = \frac{\text{Interest paid}}{\text{Working Fund}} \times 100$$

It was found from the table 12 -It was found and conclude that the Average Interest Paid to Working Fund Ratio of New Generation Private Sector Bank in India during the study period was ranged between 124.9 Per cent in case of Axis Bank to 32.54 Per cent in case of Kotak Mahindra Bank. The standard deviation ranged between 120.1 Per cent in case of Axis Bank to 9.89 Per cent in case of Kotak Mahindra Bank

It was found that in Axis Bank the co-efficient of variation of Interest Paid to Working Fund Ratio was high about 96.2 Per cent and in IndusInd Bank Interest Paid to Working Fund Ratio found low about 19.97 Per cent. It shows that Interest Paid to Working Fund Ratio in IndusInd Bank is more stable and consistent during the study period.

The Compound Annual Growth Rate during the study period found high in case of Yes Bank is about 43.96 Per cent and low in case of Axis Bank about -11.4 Per cent. With respected Interest Paid to Working Fund Ratio it was found that among New Generation Private Sector Bank in Axis Bank found good compare to other New Generation Private Sector Bank in India.

To find the signification difference between the New Generation Private Sector Bank in India with respect to Interest Paid to Working Fund ratio during the study period Anova test was further used and presented in the following table:

#### ANOVA

TABLE NO 7: ANOVA FOR INTEREST PAID TO WORKING FUND

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	63898.688	6	10649.781	3.956	.002
Within Groups	191133.285	71	2692.018		
Total	255031.973	77			

Source: computed by the researcher using table no 12

It was found from the table 1 that the "F" value of Interest Paid to Working Fund ratio of New Generation Private Sector Bank in India showed 3.956 and the significant at 5 per cent level is ".002". It was found that the significant value is less than 0.05; hence it was conclude that there is significant difference between the Banks with respect to Interest Paid to Working Fund ratio. Therefore to find the significant sample units with respect to Interest Paid to Working Fund ratio the Duncan Analysis is applied on the New Generation Private Sector Bank in India to identify the mean difference microscopically.

TABLE NO 8: DUNCAN ANALYSIS FOR INTEREST PAID TO WORKING FUND

BANK NAMES	N	Subset for alpha = 0.05		
		1	2	3
KODAK MAHIDRA	10	32.5390		
ICICI	12	53.2183	53.2183	
HDFC	12	58.2092	58.2092	
YES BANK	8	58.4372	58.4372	
DCB	12		83.7017	83.7017
INDUSIND	12		93.1750	93.1750
AXIS	12			1.2488E2
Sig.		.295	.114	.083
Means for groups in homogeneous subsets are displayed. Source, computed by the researcher using table no 12				

It was found from the Duncan analysis that the Axis Bank has major signification difference with respect to Interest Paid to Working Fund ratio among the New Generation Private Sector Bank in India.

#### CONCLUSION

It was found and concluded that the profitability position of new generation private sector bank in India with respected Spread to Total Deposit Ratio, Spread to Total Income Ratio, Interest earned to Working Fund Ratio, Interest Paid to Working Fund Ratio for Kotak Mahindra Bank and Axis Bank are better than other banks in the segment of New Generation Private Sector Banks operating in India therefore the other banks in new generation private sector banks are to improve their the profitability position.



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## APPENDIX

TABLE 9: SPARED TO DEPOSIT

EARS	AXI S	Grow th Rate	Tren d valu e	DCB	Grow th Rate	Tren d valu e	HDF C	Grow th Rate	Tren d valu e	ICIC I	Grow th Rate	Tren d valu e	INDUSI ND	Grow th Rate	Tren d valu e	KOD AK	Grow th Rate	Tren d valu e	YES	Grow th Rate	Tren d valu e
2001	1.08		100	2.53		100	4.34		100	2.47		100	2.215		100						
2002	1.56	44.3	144.3	2.47	-2.587	97.41	3.57	-17.8	82.16	1.85	-25.15	74.85	1.938	-12.51	87.49						
2003	1.90	22.08	176.2	1.96	-20.77	77.18	3.72	4.183	85.6	2.96	59.963	119.7	2.145	10.662	96.82	36.76		100			
2004	2.70	41.79	249.8	2.14	9.288	84.35	-1.58	-143	-36.39	2.76	-6.694	111.7	2.828	31.882	127.7	3.83	-89.59	10.407			
2005	2.31	-14.5	213.5	1.79	-16.25	70.65	-1.79	13.47	-41.29	2.84	3.1037	115.2	3.168	12.013	143	5.25	37.09	14.267	2.73		100
2006	2.69	16.57	248.9	2.41	34.51	95.03	4.56	-355	105.2	2.85	0.2871	115.5	2.1	-33.73	94.79	5.79	10.35	15.744	2.938	7.6252	107.6
2007	2.67	-0.82	246.8	2.71	12.44	106.8	5.43	19.04	125.2	2.88	0.9265	116.6	1.539	-26.72	69.46	5.95	2.87	16.196	2.084	-29.07	76.34
2008	2.95	10.68	273.2	2.86	5.765	113	5.19	-4.48	119.6	2.99	3.8037	121	1.58	2.6874	71.33	7.46	25.35	20.302	2.491	19.526	91.25
2009	3.14	6.446	290.8	4.25	48.32	167.6	5.20	0.163	119.8	3.83	28.228	155.2	2.076	31.414	93.74	9.71	30.06	26.404	3.162	26.932	115.8
2010	3.54	12.77	327.9	2.96	-30.34	116.8	5.01	-3.6	115.5	4.02	4.8247	162.7	3.319	59.824	149.8	7.78	-19.86	21.161	2.94	-7.004	107.7
2011	3.47	-2.08	321.1	3.37	14.02	133.1	5.05	0.896	116.5	4.00	-0.495	161.9	4.005	20.698	180.8	7.67	-1.365	20.872	2.714	-7.681	99.44
2012	3.64	5.033	337.3	3.59	6.571	141.9	4.98	-1.39	114.9	4.20	5.1162	170.2	4.023	0.4431	181.6	6.52	-15.03	17.736	3.287	21.108	120.4
Mean	2.64			2.75			3.64			3.14			2.578			9.67			2.793		
STD	0.804			0.712			2.555			0.718			0.872			9.654			0.383		
CV	30.5			25.85			70.2			22.88			33.84			99.83			13.71		
CAGR	10.66			2.958			1.163			4.529			5.099			-15.9			2.351		
Maximu	3.643			4.246			5.431			4.201			4.023			36.76			3.287		
Minimu	1.08			1.79			-1.79			1.848			1.539			3.826			2.084		

Source: Collected and Compiled By Researcher from Various Issues of RBI, Statistical Tables Relating to Banks in India

TABLE 10: SPREAD TO TOTAL INCOME

YEARS	AXIS	Growth Rate	Trend value	DCB	Growth Rate	Trend value	HDFC	Growth Rate	Trend value	ICICI	Growth Rate	Trend value	INDUSIND	Growth Rate	Trend value	KODAK	Growth Rate	Trend value	YES	Growth Rate	Trend value
2001	9.33		100	19.86		100	35		100	27.66		100	18.83		100						
2002	12	28.66	128.7	19.25	-3.054	96.95	30.91	-11.7	88.29	21.75	-21.37	78.63	18.2	-3.353	96.65						
2003	17.19	43.23	184.3	16.03	-16.71	80.75	33.29	7.721	95.11	11.37	-47.73	41.1	18.43	1.2358	97.84	37.27		100			
2004	26.58	54.6	284.9	21.69	35.25	109.2	-15.9	-148	-45.28	15.71	38.195	56.8	23.8	29.157	126.4	44.44	19.24	119.24			
2005	31.25	17.57	334.9	17.67	-18.54	88.97	-17.4	9.725	-49.69	22.13	40.891	80.03	30	26.042	159.3	40.82	-8.139	109.54	37.63		100
2006	29.8	-4.64	319.4	22.62	28.05	113.9	45.47	-361	129.9	25.47	15.07	92.09	22.88	-23.72	121.5	40.55	-0.654	108.82	29.49	-21.62	78.38
2007	28.13	-5.59	301.5	27.2	20.21	137	44.13	-2.93	126.1	22.9	-9.924	82.95	15.56	-31.98	82.64	39.99	-1.402	107.29	21.9	-25.75	58.2
2008	29.38	4.421	314.9	23.63	-13.11	119	42.17	-4.46	120.5	18.45	-19.6	66.69	13.81	-11.28	73.32	40.87	2.217	109.67	19.85	-9.349	52.76
2009	26.84	-8.62	287.7	25.78	9.097	129.8	37.82	-10.3	108	21.62	17.217	78.17	16.6	20.21	88.14	44.36	8.535	119.03	20.97	5.6072	55.71
2010	32.11	19.63	344.2	25	-3.045	125.9	41.61	10.02	118.9	24.45	13.093	88.41	27.19	63.773	144.3	47.84	7.846	128.37	26.75	27.601	71.09
2011	33.17	3.285	355.5	29.18	16.74	146.9	43.45	4.434	124.1	27.64	13.039	99.93	31.99	17.668	169.9	45.48	-4.941	122.03	26.73	-0.087	71.03
2012	29.25	-11.8	313.5	27.78	-4.802	139.9	37.8	-13	108	26.15	-5.385	94.55	26.75	-16.38	142	35.1	-22.82	94.19	22.55	-15.63	59.93
Mean	25.42			22.97			29.87			22.11			22			41.67			25.73		
STD	8.01			4.194			22.18			4.911			5.971			3.879			5.853		
CV	31.51			18.25			74.25			22.21			27.13			9.309			22.75		
CAGR	9.99			2.836			0.643			-0.47			2.968			-0.6			-6.2		
Maximum	33.17			29.18			45.47			27.66			31.99			47.84			37.63		
Minimum	9.329			16.03			-17.4			11.37			13.81			35.1			19.85		

Source: Collected and Compiled By Researcher from Various Issues of RBI, Statistical Tables Relating to Banks in India

TABLE 11: INTEREST EARNED TO WORKING FUND

YEARS	AXIS	Growth Rate	Trend value	DCB	Growth Rate	Trend value	HDFC	Growth Rate	Trend value	ICICI	Growth Rate	Trend value	INDUSIND	Growth Rate	Trend value	KODAK	Growth Rate	Trend value	YES	Growth Rate	Trend value
2001	295.1		100	130.2		100	137.9		100	94.63		100	133.8		100						
2002	191.9	-35	65.02	116.3	-10.62	89.38	87.68	-36.4	63.57	32.61	-65.54	34.46	126.4	-5.583	94.42						
2003	212.9	10.99	72.17	145.8	25.34	112	89.84	2.463	65.13	128.6	294.41	135.9	123.3	-2.385	92.17	33.46		100			
2004	685.1	221.7	232.2	121.4	-16.73	93.29	94.64	5.342	68.61	106.4	-17.29	112.4	123.2	-0.116	92.06	47.62	42.31	142.31			
2005	79.4	-88.4	26.93	152.1	25.23	116.8	68.44	-27.7	49.61	72.94	-31.43	77.09	136.8	11.044	102.2	55.53	16.6	165.94	13.78		100
2006	100.1	25.98	33.93	168.8	11.02	129.7	84.45	23.39	61.22	63.42	-13.05	67.02	137.2	0.2884	102.5	83.16	49.76	248.51	33.21	141.03	241
2007	134	33.9	45.43	103.3	-38.81	79.37	107.1	26.81	77.63	93.23	46.997	98.52	142	3.4731	106.1	81.48	-2.019	243.49	74.65	124.79	541.8
2008	79.87	-40.4	27.07	87.91	-14.9	67.54	87.98	-17.8	63.78	65.76	-29.47	69.49	139.3	-1.848	104.1	70.55	-13.42	210.82	98.92	32.509	717.9
2009	106.1	32.81	35.95	107.8	22.66	82.85	111.5	26.7	80.81	62.33	-5.213	65.87	138.8	-0.419	103.7	78.48	11.25	234.53	123.3	24.681	895.1
2010	72.54	-31.6	24.55	77.65	-27.99	59.66	75.14	-32.6	54.48	49.8	-20.1	52.63	112.9	-18.62	84.38	71.71	-8.625	214.3	-76.7	-37.81	556.7
2011	79.77	9.97	27.03	86.29	11.13	66.29	78.52	4.496	56.93	47.15	-5.33	49.82	88.62	-21.52	66.22	62.98	-12.18	188.21	106.5	38.887	773.1
2012	96.43	20.89	32.68	83.25	-3.529	63.95	91.18	16.13	66.11	55.53	17.778	58.68	113	27.532	84.45	77.44	22.96	231.42	134.9	26.606	978.8
Mean	177.8			115.1			92.86			72.7			126.3			66.24			82.75		
STD	173.8			29.61			18.67			27.77			15.52			16.29			42.27		
CV	97.76			25.73			20.1			38.2			12.29			24.59			51.08		
CAGR	-8.9			-3.656			-3.39			-4.34			-1.4			8.753			33		
Maximum	685.1			168.8			137.9			128.6			142			83.16			134.9		
Minimum	72.54			77.65			68.44			32.61			88.62			33.46			13.78		

Source: Collected and Compiled By Researcher from Various Issues of RBI, Statistical Tables Relating to Banks in India

TABLE 12: INTEREST PAID TO WORKING FUND

YEARS	AXIS	Growth Rate	Trend value	DCB	Growth Rate	Trend value	HDFC	Growth Rate	Trend value	ICICI	Growth Rate	Trend value	INDUSIND	Growth Rate	Trend value	KODAK	Growth Rate	Trend value	YES	Growth Rate	Trend value
2001	262.5		100	101.1		100	82.54		100	63.82		100	104.6		100						
2002	160.7	-38.8	61.22	88.26	-12.68	87.32	55.28	-33	66.97	23.63	-62.98	37.02	97.38	-6.891	93.11						
2003	166.1	3.34	63.27	116.8	32.35	115.6	52.94	-4.24	64.13	109.1	361.68	170.9	92.73	-4.781	88.66	16.03		100			
2004	441	165.6	168	88.49	-24.24	87.56	112.5	112.5	136.2	83.91	-23.07	131.5	83.62	-9.821	79.95	19.45	21.35	121.35			
2005	49.26	-88.8	18.77	117.1	32.33	115.9	82.84	-26.3	100.4	50.94	-39.29	79.81	86.7	3.6801	82.89	25.74	32.31	160.56	5.438		100
2006	62.74	27.36	23.9	123	5.055	121.7	36.41	-56.1	44.11	42.55	-16.47	66.67	100.8	16.288	96.39	39.2	52.32	244.56	18.28	236.2	336.2
2007	87.98	40.22	33.52	67.72	-44.95	67	49.42	35.74	59.87	66.33	55.884	103.9	116.3	15.33	111.2	42.07	7.322	262.47	52.89	189.31	972.6
2008	50.4	-42.7	19.2	60.73	-10.33	60.08	42.51	-14	51.5	50.16	-24.38	78.59	117.1	0.6709	111.9	36.44	-13.39	227.33	73.86	39.642	135.8
2009	69.99	38.88	26.66	74.86	23.28	74.07	60.82	43.08	73.68	45.56	-9.171	71.39	111.2	-5.024	106.3	39.6	8.669	247.04	91.87	24.385	168.9
2010	41.34	-40.9	15.75	53.7	-28.27	53.13	36.18	-40.5	43.83	34.08	-25.19	53.4	75.95	-31.69	72.61	30.78	-22.27	192.04	51.2	-44.27	941.5
2011	45.22	9.382	17.23	55.85	4.008	55.26	36.98	2.217	44.8	30.78	-9.687	48.23	54.64	-28.06	52.24	30.12	-2.139	187.93	73.66	43.877	135.5
2012	61.28	35.51	23.35	56.81	1.72	56.21	50.09	35.46	60.69	37.76	22.673	59.17	77.08	41.077	73.7	45.96	52.56	286.7	100.3	36.19	184.5
Mean	124.9			83.7			58.21			53.21			93.17			32.54			58.44		
STD	120.1			25.87			23.33			24.34			18.61			9.885			33.48		
CV	96.2			30.91			40.08			45.74			19.97			30.38			57.29		
CAGR	-11.4			-4.688			-4.08			-4.28			-2.51			11.11			43.96		
Maximum	441			123			112.5			109.1			117.1			45.96			100.3		
Minimum	41.34			53.7			36.18			23.63			54.64			16.03			5.438		

Source: Collected and Compiled By Researcher from Various Issues of RBI, Statistical Tables Relating to Banks in India

**INTERFERENCE EVADING USING SYMBIOTIC CODES FOR HIGH DENSITY WIRELESS NETWORKS****M.ANJALI****STUDENT**

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**ABSTRACT**

*The investigation of co-channel interference mitigation techniques such as interference cancellation through receiver processing, interference randomization by frequency hopping, and interference avoidance through resource usage restrictions imposed by frequency and power planning has become a key focus area in achieving dense spectrum reuse in next generation cellular systems. Collisions and hidden terminals are known problem in 802.11 networks. Measurements from a production WLAN show that 10% of the sender-receiver pairs experience severe packet loss due to collisions. Current 802.11 WLANs rely on carrier sense (CSMA) to limit collisions-i.e., senders sense the medium and abstain from transmission when the medium is busy. We propose the solution is to use the symbiotic code(SC) thus, enables successful simultaneous co-channel transmissions even if they result in a collisions. The performance of SC scales with the number of interfering links achieving median throughput improvements of 30 and 86 percent over time sharing with two and three interfering links respectively. We address fundamental challenges in realizing SC including synchronization, coding algorithms, extensions to different modulations. We also implement SC on software defined radios and demonstrate its practical feasibility. High level, SC leverages properties of collisions in asymmetric interference scenarios, and codes transmissions to enable successful reception at the receiver.*

**KEYWORDS**

symbiotic codes, wireless networks.

**INTRODUCTION****WHAT IS MOBILE COMPUTING?**

Mobile computing is a technology that allows transmission of data, via a computer, without having to be connected to a fixed physical link.

It is human-computer interaction by which a computer is expected to be transported during normal usage. Mobile computing involves mobile communication, mobile hardware, and mobile software.

Communication issues include ad-hoc and infrastructure networks as well as communication properties, protocols, data formats and concrete technologies.

Hardware includes mobile devices or device components. Mobile software deals with the characteristics and requirements of mobile applications.

**TYPES OF MOBILE SYSTEM**

- Traditional distributed system
- Nomadic distributed system
- Adhoc distributed system

**TRADITIONAL DISTRIBUTED SYSTEM**

Traditional distributed systems consist of a collection of fixed hosts that are themselves attached to a network- if hosts are disconnected from the network this is considered to be abnormal whereas in a mobile system this is quite the norm.

These hosts are fixed and are usually very powerful machines with fast processors and large amount of memory.

The bandwidth in traditional systems is very high too. Furthermore, the execution context is said to be static as opposed to a dynamic context whereby host join and leave the network frequently.

In a traditional system, location rarely changes as well and hosts are much less likely to be added or deleted from the network.

Ex- wired communication networks.

**NOMADIC DISTRIBUTED SYSTEM:**

This kind of system is composed of a set of mobile devices and a core infrastructure with fixed and wired nodes.

Mobile devices move from location to location, while maintaining a connection to the fixed network. There are problems that arise from such shifts in location.

The mobile host has a home IP address and thus any packets sent to the mobile host will be delivered to the home network and not the foreign network where the mobile host is currently located. Such problem can be solved by forwarding packets to the foreign network with the help of Mobile IP.

Nevertheless, Mobile IP also suffers from efficiency (routing issues), Quos, security (authentication of mobile host at foreign network and end-to-end security required) and wireless access (reduced capacity) problems.

Ex- telephone communication networks.

**AD-HOC MOBILE DISTRIBUTED SYSTEM**

Ad-hoc distributed systems are possibly the only type of network that comes close to mobile networks in the sense that every node is literally mobile.

It is these networks that are very much seen as the systems of the future, whereby hosts are connected to the network through high-variable quality links (e.g.: from GPS to broadband connection) and executed in an extremely dynamic environment.

A-hoc systems do not have any fixed infrastructure which differs them both from traditional and nomadic distributed systems.

In fact, ad-hoc networks may come together as needed, not necessarily with any assistance from the existing (e.g.: Internet) infrastructure.

When nodes are detached from the fixed/mobile network they may evolve independently and groups of hosts opportunistically form "clusters" of mini-networks. The speed and ease of deployment make ad-hoc networks highly desirable.

These kinds of systems are extremely useful in conditions where the infrastructure is absent, impractical to establish or even expensive to build (e.g.: military applications, high terrain uses, and emergency relief operations).



**WIRELESS NETWORKS IN COMPARISON TO FIXED NETWORKS:**

- Higher loss-rates due to interference
  - Emissions of, e.g., engines, lightning
- Restrictive regulations of frequencies
  - Frequencies have to be coordinated, useful frequencies are almost all occupied
- Low transmission rates
  - Local some Mbit/s, regional currently, e.g., 9.6kbit/s with GSM
- Higher delays, more jitter
  - Connection setup time with GSM in the second range, several hundred Milliseconds for other wireless systems, tens of seconds with Bluetooth
- Lower security, simpler active attacking
  - Radio interface accessible for everyone, base station can be simulated, Thus attracting calls from mobile phones
- Always shared medium
  - secure access mechanisms important

**TYPES OF MOBILE COMPUTING DEVICES****LAPTOP COMPUTER**

A laptop computer is the most common type of mobile computer device. A laptop computer is a one-piece device (meaning the keyboard, screen and computer are all attached) that is small enough to fit into a person's lap. Modern laptops range in price, size, and capabilities all though most laptops come equipped with DVD-ROM drives, wireless cards, and at least one gigabyte of RAM.

Laptops are capable of handling any task normally carried about by a desktop computer, such as checking email, creating documents, or playing games.

**NOTEBOOK COMPUTERS**

Notebook computers function much like laptops. However, notebook computers do not come equipped with DVD-ROM drives, and have less memory and a smaller hard drive.

A notebook computer is smaller and sleeker then a laptop computer, but functionality is limited to basic computer programs and Internet browsing.

**TABLET PC**

A Tablet PC is similar to a laptop computer in that a Tablet PC often carries a wireless network card, and an adequate hard drive and memory.

Unlike the laptop computer, the Tablet PC does not fold open to reveal a separate keyboard and screen. Instead, the Tablet PC is a single screen and the consumer uses a stylus to write on the tablet in lieu of the traditional keyboard.

**PERSONAL DIGITAL ASSISTANT**

A Personal Digital Assistant (PDA) functions much like a laptop computer or Tablet PC but is a smaller, handheld device.

Original PDA devices were designed as an electronic address and date book holding contact information, calendars, and to-do lists.

**MOBILE OPERATING SYSTEM****SYMBIAN OS**

Symbian OS has become a standard operating system for smartphones and is licensed in the products of more than 85 percent of the manufacturers of telephone headsets capable of processing data.

The Symbian OS was designed to meet the specific requirements of 2.5G and 3G mobile phones.

**WINDOWS MOBILE**

The Windows Mobile platform is available in a range of different devices, which come from several different wireless carriers, find the Windows Mobile software products from Dell, HP, Motorola, Palm and i-mate. devices operating under Windows Mobile are compatible with GSM or CDMA.

**PALM OS**

Since the introduction of the first Palm Pilot in 1995-1996, the veteran Palm OS platform has provided essential business tools to mobile devices, as well as the ability to access the Internet or a central corporate database via a wireless connection.

FIG. 1

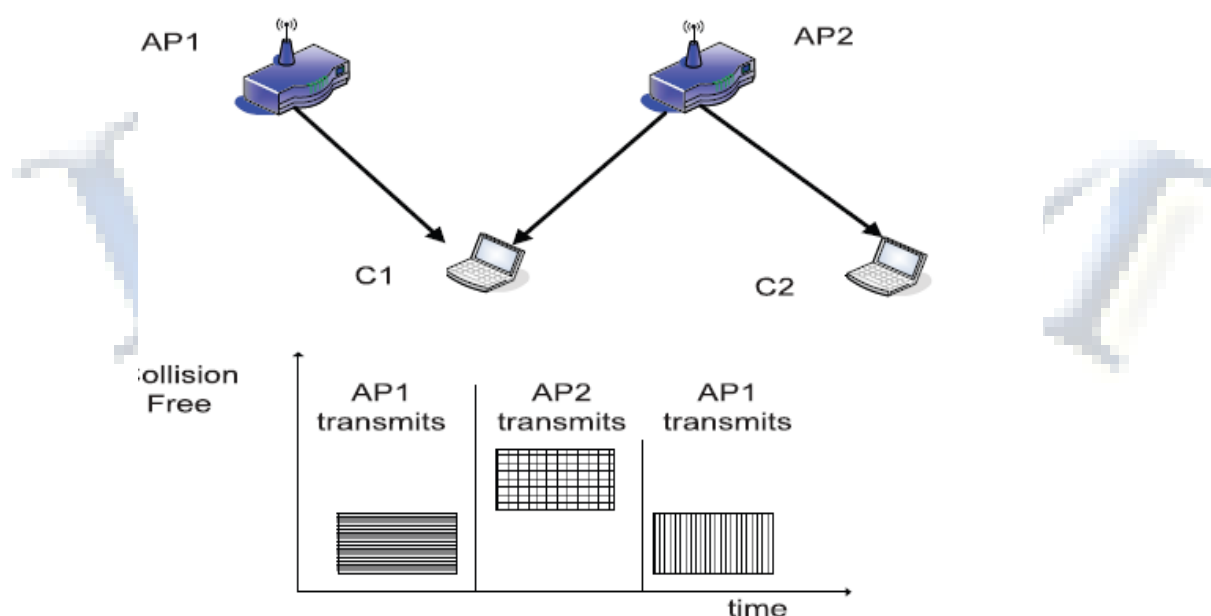
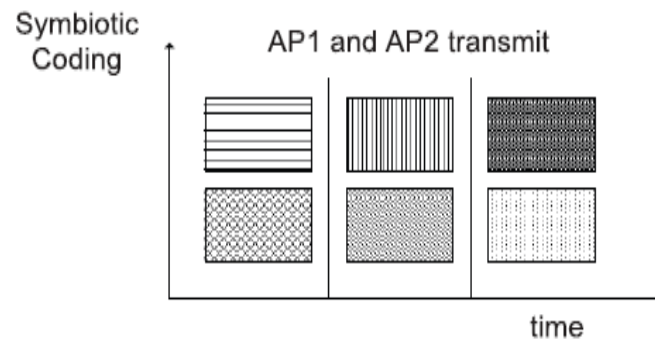


FIG. 2

**ADVANTAGE**

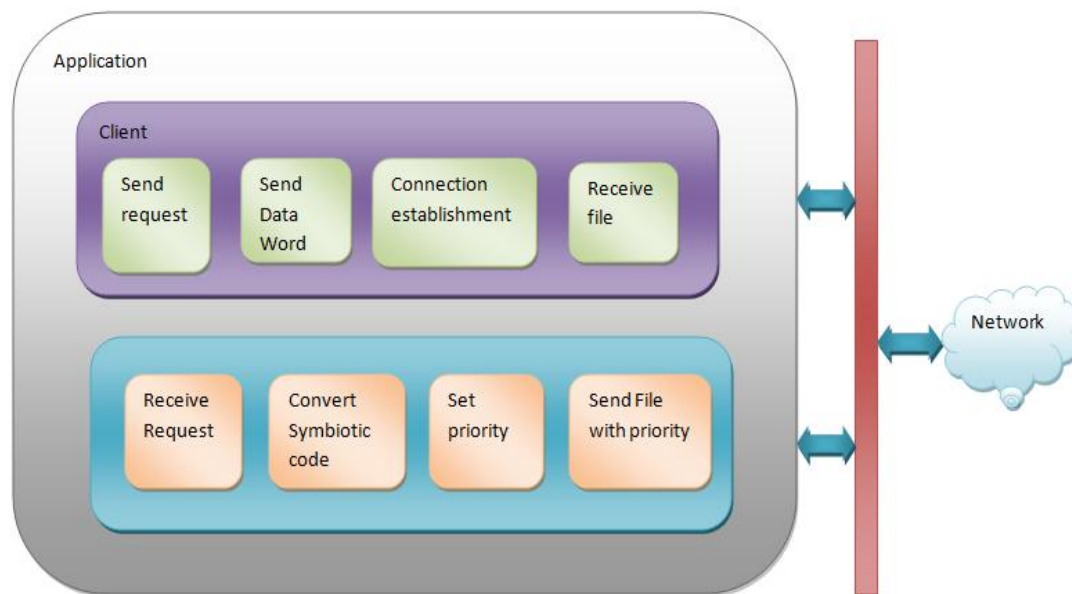
- Reducing transaction cost from one a/c to another
- Streamline business processes.
- Everything can be done through mobile internet
- Competitive pricing.
- Reducing time to order for any products.
- User friendly
- Low transmission power
- Robustness

**BENEFITS OF MOBILE COMPUTING**

- Reduced radio congestion
- Lighter dispatch workload
- Easier resource management and allocation
- Cost saving by avoiding news paper

**SYSTEM ARCHITECTURE**

FIG. 3

**SYMBIOTIC CODE**

SC is a topology aware coding technique that leverages asymmetric interference relations among links to obtain capacity improvements compared to time sharing the wireless medium.

SC identifies harmful combinations from topologies and uses modified coding and decoding to avoid harmful combinations.

Generally, for an N AP network, where  $d_i$  is the to be conveyed to client  $j$  from its associated AP  $AP_j$ , SC refers to the use of an appropriate coding function  $E_i$  and decoding function  $G_i$  at the  $i$ th AP and client respectively, such that the following condition is satisfied at each client  $i$ :

$$G_i(f_c(E_1(d_1, \dots, s_N), \dots, E_N(d_1, \dots, d_N))) \\ = G_i(E_i(d_1, \dots, d_N)).$$

[1]

It depends on the modulation. It may be represented as a binary Or function for the ASK modulation.

- A symbiotic code is a rule for converting a piece of information (for example, a word, a letter, a phrase, etc.) into another—usually shortened or covert form or representation (one sign into another sign), not necessarily of the same type.
- In communications and information processing, encoding is the process by which information from a source is converted into symbols to be communicated.
- Decoding is the reverse process, converting these code symbols back into information understandable by a receiver.
- Variable-length codes are especially useful when clear text characters have different probabilities.
- A symbiotic code is usually an algorithm which uniquely represents symbols from some source alphabet, by encoded strings, which may be in some other target alphabet

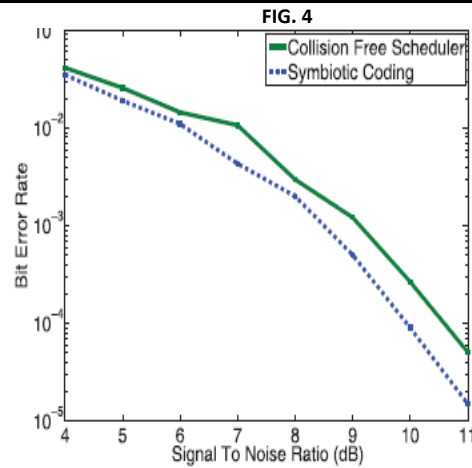


Fig. 17. BER improvement: SC outperforms time division scheduling. Strategic selection of transmitted symbols leads to received symbols spaced farther apart in the constellation than with individual transmissions.

#### FLOWCHART OF THE CODE GENERATION ALGORITHM

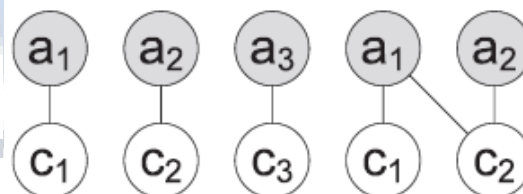
FIG. 5

Flowchart of the code generation algorithm.

Dataword	AP1	AP2
0000	000,001,010,011, 100,101,110,111	000,001,010,011, 100,101,110,111
0001	000,001,010,011, 100,101,110,111	000,001,010,011, 100,101,110,111
0010	000,001,010,011, 100,101,110,111	000,001,010,011, 100,101,110,111
0011	....	000,001,010,011 100,101,110,111
0100	....	....
0101	....	....
0110	....	....

#### FLOWCHART FOR CODE SCHEDULING ALGORITHM

FIG. 6



#### SYNCHRONIZATION

- Since we used a cable that carries the 100-MHz clock between two USRP2s, we measured that the transmit locks are synchronized to within a sample clock (i.e., 10 nano seconds)
- The computing power limitation at the receiver prevents us from sampling at a granularity lower than 250 ns.
- Hence, we sample at 250 nanoseconds at the receiver and observe that the transmissions from AP1 and AP2 are synchronized within this granularity.
- Thus, the synchronization achieved is a small fraction of symbol duration of 1<sub>s</sub>. Then AP2 to be perfectly coherent to within our sampling levels at C1(250 nanoseconds), thereby enabling Existing frequency.

#### PRACTICAL ENTERPRISE NETWORK BENEFITS

We explore the benefits that our solution provides to a large enterprise WLAN over and above any natural spatial reuse that can be exploited simply by scheduling.

We collect signal strength traces from a large enterprise network comprising around 30 APs distributed in the three 802.11g channels 1, 6, and 11, operating in the 2.4-GHz band.

FIG. 7

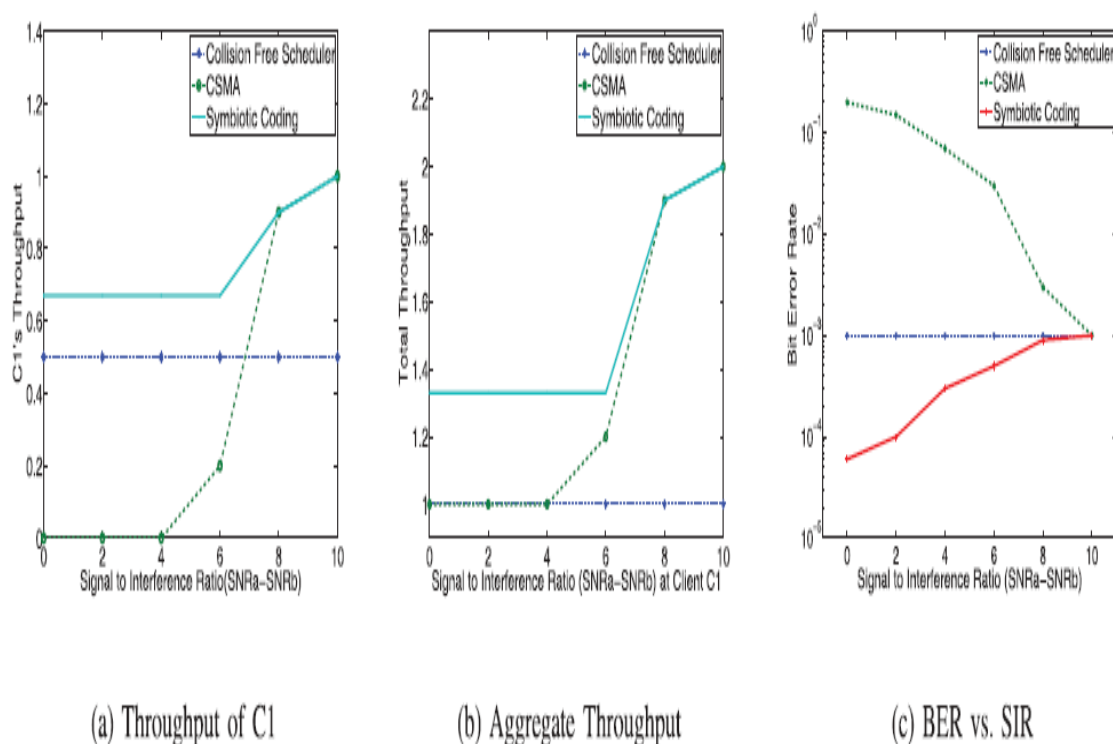


Fig. 18. SNR and SIR: SC converts interfering transmission from AP2 to beneficial transmission and demonstrates benefits with  $JNR = SNR_i - SNR_o$ .

#### IMPLEMENTATION

After the careful analysis the system has been identified to have the following details.

- **Encumber the assortment peers.**
- **Hurl the data word.**
- **Hooking launch.**
- **Electing Codeword Primacy**
- **Tidings handover.**

#### ENCUMBER THE ASSORTMENT PEERS

- Encumber the active nodes in LAN. Once the correct destination router is found, an end-to-end peer connection (TCP or IP) is established to carry end-system.
- This connection remains active as long as the file requested transferred and it is dynamically shut down when not in use, permitting casual, any-to-any communication without the burden of specifying peer connections in advance.
- It also allows any-to-any routings dynamically shut down when not in use, permitting casual in large internetworks in which persistent TCP connections between every pair of routers would not be possible.

#### HURL THE DATA WORD

- A data word is a piece of information that determines the functional output of a transfer
- Without a data word, the algorithm would produce no useful result. In code scheduling algorithm, a Symbiotic Code specifies the particular transformation of data word into code. Code word as are also used to choose priority as well as to avoid hidden node problems and collision
- Code word is generated for evading collision. In this module code word carried to hurl the file successfully

#### HOOKING LAUNCH

- The number of connections to establish between each pair of node in a network. Link is established between each and every node for communication. From the source node and intermediates node must have connection between combinations of multi node each and every node must be link to each other.
- In multipath data transmission, send the message from source node that means which type of file size and file extension

#### ELECTING CODEWORD PRIMACY

- The data word send by multiple clients will be forwarded to the server. The data word will be converted to the code word.
- This process is done by the main node. Among the three requested node the priority will be chosen by the server automatically based on the highest leading one's.
- If two nodes have same value of leading one's then the priority will be move on to the highest leading zero's.
- If this condition also fails then randomly three numbers will be chosen for priority settings.

#### TIDINGS HANDOVER

- The data word will be send to the main node as file request and the tidings can be multiple requested node and code scheduling algorithms to avoid the collision.
- The source node sends all type of file, and then enters the data word and destination node.

- Data sends from source node to destination node over the network. As well as data must be send from source node to intermediate node automatically source node to intermediate node automatically.
- Data send from source node to destination node in single path using wireless LAN. In this module the data's are successfully transfer from source to destination.

## CONCLUSION

In this paper, we argue for joint modulation and coding across multiple links to improve the concurrency in high density Wireless LANs.

We propose a practical approach called SC that targets asymmetric interference scenarios and provides scalable capacity gains in high-density WLANs without requiring coordination among receivers.

SC that avoids the We address both the algorithmic and systems challenges. Our evaluation on software radios and using traces from real S in practice. Networks confirms significant benefit

Symbiotic Code, a receiver that can decode collisions. Our core contribution is a new form of interference cancellation that iteratively decodes strategically picked data word, exploiting asynchrony across successive collisions. We show via a prototype implementation and test bed evaluation Symbiotic Code addresses the hidden terminal problem in WLANs, improving the throughput and loss rate. The Main node collects information about the data word by piggybacking code word information and priority on their own transmissions and promiscuously listening for transmissions from other nodes. Using the collected data, each node executes a Symbiotic Code that iteratively increases the number of concurrent transmissions that can take place.

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**SECURITY CONCERNS OF ONLINE USERS IN INDIA**

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**ABSTRACT**

*E-Commerce in India has been growing at an explosive growth rate. This growth has led to the rise of security concerns among the online users. Online users worry regarding the safety of their transactions and theft of personal and financial information while transacting online. Therefore the present study makes an attempt to examine the level of concern of online users towards negative events; types of bad experiences encountered online and actions taken to ensure information safety. A questionnaire survey was undertaken to examine these issues. The survey findings indicated that the greatest concern of online users is the fear of credit card information being stolen. Moreover payment issues appeared to be the most common bad experience encountered online. Merely half of the online transaction users read terms and conditions before conducting an online transaction. The conclusion drawn indicates that though security of personal/financial information is a major concern for the users, but they fail to take sufficient steps to ensure the same.*

**JEL CLASSIFICATION CODES**

C12, C14, C83, L81.

**KEYWORDS**

online transactions, security concerns, survey.

**INTRODUCTION**

India's internet users' base of about 120 million is currently the third-largest in the world and is likely to become the second-largest user base, the largest in terms of incremental growth, with 330 million to 370 million Internet users in 2015 (McKinsey & Company, Online and upcoming: The Internet's impact on India, 2012). Further the number of users making online transactions has seen a rapid growth, expected to grow from 11 million in 2011 to 38 million in 2015 (Ernst & Young, Rebirth of e-Commerce in India, 2013). With the growing number of online transaction users in India, their concerns vis-à-vis security and privacy of these transactions are also on the rise.

Moreover the Ernst & Young Study (2013) on e-commerce in India reports that the success rate of credit or debit cards is low at around 74% and that of net banking transactions at around 68%, pointing this as an area of concern for e-commerce in India. These figures raise questions over the security of online transactions in India. Hence it becomes essential to investigate into the security concerns of online transaction users; their bad experiences with respect to online transactions and the actions taken by them to ensure safety. The present study therefore makes a modest attempt to study these issues among the Indian users engaged in online transactions.

**REVIEW OF LITERATURE**

A number of studies have examined the risk perceptions of users of online transactions. Following is the brief description of these studies.

Miyazaki and Fernandez (2001) evaluated the risk perceptions of U.S. online consumers using questionnaire survey. The findings indicated that higher internet experience and the use of other remote purchasing methods (such as telephone and mail-order shopping) are related to lower levels of perceived online shopping risk.

Godwin (2001) investigated the privacy and security concerns of IT users in USA using a survey study. The study indicated the order of importance of various security concerns (arranged in a descending order) - privacy, security and threats, impersonation and forged identity, children protection, e-mail safety and censorship. Privacy and security concerns were revealed to be the main impediments to shopping on internet.

Sheehan (2002) conducted an e-mail survey of perceived privacy concerns of online users under 15 different situations. The results revealed that majority of the online users were pragmatic in their approach (i.e. their concerns about privacy depended on the situation) and that younger people were more pragmatic and those with higher levels of education were more concerned about their privacy.

Mukherjee and Nath (2003) conducted a survey to study the sample of various online banking users in India. The findings indicated that shared value is the most critical to develop trust and customer commitment in online banking transaction and within shared value perceived privacy and security are the most significant factors.

Park and Kim (2003) investigated the relationship between various characteristics of online shopping and consumer purchase behaviour using an online survey in Korea. The findings indicated that information quality; user interface quality and also the security perceptions strongly influence consumer's site commitment and actual purchase behaviour.

Constantinides (2004) studied the factors affecting the online consumer's behaviour and revealed functionality of the website, content elements and psychological elements as the three main constituents of an online experience. The psychological elements comprised of trust and credibility of the online vendor and web site including transaction security and customer data safety.

Flavian and Guinaliu (2006) studied the impact of privacy and perceived security on the level of consumer trust in internet. The study revealed that consumer's loyalty to a web site is closely linked to the levels of trust in internet and further trust is influenced by the consumer perceived security.

Thaw, Mahmood and Dominic (2009) examined the role of security, privacy and risk perceptions among the online shopping consumers in Malaysia. The study concluded that consumers' trust in online transactions is significantly related with the trustworthiness of web vendors and negatively with perceived risks in online transactions.

Velmurugan (2009) discusses the problems and prospects of trust and security in e-business, specifically analyzing the points a business could follow in building customer trust.

These studies have examined the role of security and the risk perceptions of online users across various countries. However there is a dearth of studies examining the risk perceptions of Indian users of online transactions. Therefore the present study aims to investigate the risk perceptions and security concerns of online users in India.

**NEED/IMPORTANCE OF THE STUDY**

Business to Consumer E-Commerce has registered a strong growth over the recent years. The number of users making online transactions in India is on a rapid rise. But the question arises that whether the users are still very much concerned about the security when transacting online. Moreover a low success rate of credit/debit card and net banking transactions in India as pointed out in various previous researches (Ernst & Young 2013) makes it essential to look deeper into

the security concerns of online users. Also there are very few studies examining the risk perceptions of online users in India. Therefore the present is an attempt to examine the risk perceptions and concerns of Indian online users.

## OBJECTIVES

The following are the objectives of the study:

- 1) To examine the level of agreement of users towards security of online transactions.
- 2) To examine the level of concern of the online users for the various negative events.
- 3) To identify the percentage of users who read terms and conditions before doing an online transaction.
- 4) To examine the various types of bad experiences encountered online by the users.
- 5) To study the actions taken by the users to reduce theft of their personal/financial information.
- 6) To examine the relationship between the level of concern of the users regarding various negative events and their actions to reduce the same.

## HYPOTHESES

The present study attempts to test the following hypotheses:

- 1) There is no significant difference in the degree of agreement to the security of online transactions.
- 2) There is no significant difference in the level of concern of the online users for the various negative events.
- 3) 70% of online users read the terms and conditions before conducting an online transaction.
- 4) There is no significant difference between the bad experiences encountered by the online users.
- 5) There is no association between the respondents who are very much concerned about their credit card information being stolen and the respondents who use low limit credit cards while transacting online.
- 6) There is no association between the respondents who are very much concerned about their credit card information being stolen and respondents who go for transactions with cash on delivery option.
- 7) There is no association between the respondents who are very much concerned about their username and password being stolen and the respondents who regularly change their passwords.
- 8) There is no association between the respondents who are very much concerned about receiving emails that contain links sending the user to the wrong site and the respondents who always check URL of links before clicking on them.
- 9) There is no association between the respondents who are very much concerned for their personal and financial information being revealed by their banker and respondents who never use a payment method that allows access to their bank account.
- 10) There is no association between the respondents who are very much concerned for their personal and financial information being revealed by their banker and the respondents who go for cash on delivery option.

## RESEARCH METHODOLOGY

A questionnaire survey was administered to 110 users of online transactions. However completed responses were received from 85 respondents. Hence the sample size for the study is 85. The survey data was analyzed using frequency tables, crosstabulations and various non parametric tests using the Statistical Package for Social Science software.

## RESULTS & DISCUSSION

As the first step, the demographic characteristics of the study sample were examined. The Gender Profile; the Age Profile and the Education Profile of the respondents are depicted in Table 1; Table 2 and Table 3 respectively.

TABLE 1: GENDER PROFILE

Gender	No. of Respondents
Male	46
Female	39
Total	85

TABLE 2: AGE PROFILE

Age Category	No. of Respondents
Below 20	8
20 & below 30	60
30 & below 40	7
40 & below 50	5
Above 50	5
Total	85

TABLE 3: EDUCATION PROFILE

Highest Educational Qualification	No. of Respondents
XIth Pass	8
Graduation	28
Post Graduation	29
Professional Qualification	18
Others	2
Total	85

These show that the study sample is composed of 46 male and 39 female respondents. Nearly 71% of the study sample is aged between 20 to below 30 years of age and majority of the respondents hold the highest qualification as post graduation.

Further to examine the user perception of security of online transactions the respondents were asked about their level of agreement to the statement that 'online transactions are secured transactions'. The null hypothesis assumed no significant difference in the degree of agreement to the security of online transactions and was tested using One- sample Kolmogorov- Smirnov Test at 5% level of significance. The test results (Test value= 8.026, P-value= 0.000) revealed that there is a significant difference in the degree of agreement to the security of online transactions. Table 4 depicts the number and the percentage of users and their level of agreement to the statement.

TABLE 4: LEVEL OF AGREEMENT TO THE SECURITY OF ONLINE TRANSACTIONS

Level of Agreement	Number of Users	Percentage of Users (%)
Strongly agree	10	11.8
Agree	64	75.2
No Opinion	8	9.4
Disagree	2	2.4
Strongly Disagree	1	1.2
Total	85	100

These findings signify that majority of the respondents (around 75%) agreed that online transactions are secure transactions. 12% strongly agreed and only 2.5% of the total respondents disagreed to consider online transactions as secure. This further indicates that most of the respondents in the study (around 87%) feel that conducting an online transaction is safe.

The study also investigated the level of concern of the online users about various negative events related to online transactions. The null hypothesis assumed no significant difference in the level of concern of users for various events. One- sample Kolmogorov- Smirnov Test (5% level of significance) was applied to test the same. The results indicated significant difference in the level of concern of users for all these events (as shown by Table 5). Table 6 illustrates the users' level of concern for various negative events where the events are arranged in an order of maximum to minimum level of concern.

TABLE 5: ONE SAMPLE K-S TEST RESULTS

Negative Events	Kolmogorov- Smirnov Z value	P-value
My credit card information being stolen	5.532	0.000
Having my Username and Password stolen	5.098	0.000
Receiving emails that contain links that send me to the wrong (phishing) site	3.796	0.000
Receiving emails from sources I do not know	2.820	0.000
Having Banker reveal my personal and financial information to a third party	5.315	0.000

TABLE 6: USERS' LEVEL OF CONCERN FOR THE VARIOUS NEGATIVE EVENTS

Negative Events	Number of users very much concerned	Number of users somewhat concerned	Number of users not very concerned	Total
My credit card information being stolen	51 (60%)	25 (29.4%)	9 (10.6%)	85
Having Banker reveal my personal and financial information to a third party	49 (57.6%)	19 (22.4%)	17 (20%)	85
Having my Username and Password stolen	47 (55.3%)	31 (36.5%)	7 (8.2%)	85
Receiving emails that contain links that send me to the wrong (phishing) site	35 (41.2%)	31 (36.5%)	19 (22.3%)	85
Receiving emails from sources I do not know	26 (30.6%)	36 (42.3%)	23 (27.1%)	85

Note – Percentage given in parentheses

The order of importance of various negative events for which the respondents are very much concerned (descending order) is as follows – credit card information being stolen; banker revealing their personal and financial information; username and password being stolen; receiving emails that contain links that send user to the wrong (phishing) site and lastly receiving emails from sources unknown to the user. Hence it is clearly evident that the maximum number of online users is very much concerned about their credit card information being stolen.

The next hypothesis assumed that 70% of the users read terms and conditions before doing an online transaction. Binomial test applied at 5% level of significance, confirmed that only 51% of the respondents read the terms and conditions while doing online transactions.

Further to examine if there is a significant difference between the bad experiences encountered online by the users, Cochran's Q test was applied at 5% level of significance. The results provided evidence that there is a significant difference in the types of bad experiences encountered online. Table 7 depicts the results of Cochran's Q test and Table 8 illustrates the number and the percentage of users for each of the bad experience encountered online.

TABLE 7: COCHRAN'S Q TEST RESULTS

N	85
Cochran's Q	50.292
Df	3
P-value	0.000

TABLE 8: NUMBER AND PERCENTAGE OF USERS FOR EACH BAD EXPERIENCE CATEGORY

Bad Experiences encountered online	Number of Users	Percentage of Users
Payment issues	37	43.5
No bad experience	33	38.8
Delay in delivery	21	24.7
Faulty product	11	12.9
Information theft	2	2.4

Hence the most common bad experience encountered online emerges as the payment issues faced by the users when transacting online. Next the majority users claim to have faced delay in the delivery of the products/services ordered online. However it must be noted that almost 39% of the users did not encounter any bad experience online.

Given the significance of information theft in online transactions, the study explores the various ways in which online users deal with the problem of information theft. The users were asked about the actions they regularly take to reduce the chances of their personal and financial information being stolen. Table 9 depicts the percentage of users taking regular actions to reduce information theft.

TABLE 9: ACTIONS TAKEN BY THE USERS TO REDUCE THEFT OF INFORMATION

Actions Taken to reduce theft of information	Percentage of Users
I regularly change my passwords	48.4
I always check the URL of links I receive in emails before clicking on them	45.3
I go for transactions with cash on delivery option only	27.4
I use low limit credit cards when transacting on the Internet	24.2
I never use a payment method that allows access to my bank account	15.8
I use a service that makes my identity anonymous when transacting online	9.5
I use a service that provides replacement credit cards I am not liable for	3.2

These results indicate that majority of the users change their passwords regularly to reduce the chances of information theft. Approximately 45% of the users always check the URL of links they receive in emails before clicking on them and 27% go for transactions which have the option of cash on delivery. The above results signify that not even half of the online users undertake various actions to reduce theft of information. Hence it can be said that most of the online users fail to take regular actions to reduce the likelihood of their personal and financial information being stolen. This is quite surprising because most of the users are very much concerned about their personal and financial information being stolen but they fail to take necessary steps to reduce the same.

Further the association between the level of concern of the users towards various negative events and actions taken by them to reduce the chances of information theft was examined. For this purpose six different hypothesis were formulated. The first hypothesis of no association between the respondents who are very much concerned about their credit card information being stolen and the ones who use low limit credit cards is tested using Chi Square test at 5% level of significance. The test results [ $\chi^2 (2, N = 85) = 0.405, p = 0.817$ ] indicate no association. These results are re-affirmed using cross tabulation. Table 10 depicts the cross tabulation results.

TABLE 10: CROSS TABULATION RESULTS

My credit card information being stolen	I use low limit credit cards when transacting on the internet		Total
	Yes	No	
Very much concerned	12	39	51
Somewhat concerned	6	19	25
Not very concerned	3	6	9
Total	21	64	85

It is evident from above that only 24% of the respondents (12 out of 51 respondents) who are very much concerned about their credit card information being stolen use low limit credit cards. Secondly chi square test shows no association between people who are very much concerned about their credit card information being stolen and people who go for transactions with cash on delivery option [ $\chi^2 (2, N = 85) = 0.955, p = 0.620$ ]. Table 11 depicts the cross tabulation results for the same indicating that only 17 out of 51 respondents (one-third respondents) who are very much concerned about their credit card information being stolen go for transactions with cash on delivery.

TABLE 11: CROSS TABULATION RESULTS

My credit card information being stolen	I go for transactions with cash on delivery option only		Total
	Yes	No	
Very much concerned	17	34	51
Somewhat concerned	6	19	25
Not very concerned	2	7	9
Total	25	60	85

The third hypothesis examined the association between the respondents who are very much concerned about their username and password stolen and the respondents who regularly change their passwords. The chi square test results [ $\chi^2 (2, N = 85) = 2.755, p = 0.252$ ] do not show any association. Cross tabulation results (Table 12) signify that approximately 58% of the respondents who are very much concerned about their username and password being stolen, regularly change their passwords.

TABLE 12: CROSS TABULATION RESULTS

Having my username and password stolen	I regularly change my passwords		Total
	Yes	No	
Very much concerned	27	20	47
Somewhat concerned	12	19	31
Not very concerned	4	3	7
Total	43	42	85

Similarly the chi square test revealed no association between the respondents who are very much concerned about receiving emails that contain links sending them to wrong site and the respondents who always check the URL of links before clicking on them [ $\chi^2 (2, N = 85) = 2.638, p = 0.267$ ]. Further chi square test revealed no association between the respondents who are very much concerned for their personal and financial information being revealed by their banker to a third party and the respondents who never use a payment method that allows access to their bank account [ $\chi^2 (2, N = 85) = 23.861, p = 0.145$ ]. Lastly the chi square test provides evidence of no association between the respondents who are very much concerned for their personal and financial information being revealed by their banker and people who go those who for cash on delivery option [ $\chi^2 (2, N = 85) = 0.701, p = 0.704$ ].

Thus the above findings confirm no association between the level of concern of the users towards various negative events and actions taken by them to reduce the chances of information theft. This signifies that the users of online transactions are very much concerned about their personal and financial information being stolen; however they do not take necessary steps to reduce the risk of information theft.

## FINDINGS

The findings of the study revealed that nearly 87% of the respondents think that online transactions are secure transactions. Nevertheless majority of the online users were found to be very much concerned about their credit card information being stolen when transacting online. The findings revealed that only 51% of the respondents read the terms and conditions before conducting an online transaction. Payment issues appeared to be the most common bad experience encountered online by the users followed by the delay in the delivery of product/service ordered. However more than one-third of the respondents said that they did not encounter any bad experience online. With regards to the various actions taken by the users to reduce theft of information, majority of the users indicated that they change their passwords regularly. Moreover the findings revealed no association between the level of concern of the users towards negative events and the actions taken by them to reduce the chances of information theft.

## CONCLUSIONS

The present study has been undertaken to examine the security concerns and bad experiences of Indian users engaged in online transactions. The results reveal that majority of the Indian users consider online transactions to be secure. However 61% of the users claimed to have encountered bad experience online in some form or other. Indian users appear to be extremely concerned about two types of online risks i.e. the risk of credit card information being stolen and risk of banker revealing users' personal and financial information to a third party. Thus information theft is perceived to be the most important threat by the online users. This further has implications for both the online shopping sites and online banking sites as they need to assure their customers of personal/financial information safety.

Also the Indian users were found to be reluctant in taking actions required to reduce the risk of their personal/financial information being stolen. The survey results indicated that nearly half of the respondents read the terms and conditions before conducting an online transaction. However not even half of the online users either change their passwords regularly nor check the URL of links they receive in emails before clicking on them. Therefore it may be said that online users are very much concerned about their personal/financial information being stolen or revealed to the third party; however they do not take required actions to avoid the same. These findings suggest that Indian users must be alert and proactive in taking actions to ensure safety of their online transactions.

**SCOPE FOR FURTHER RESEARCH**

The present study is limited to studying the security concerns of the Indian users of online transactions. It could be further extended to examine and compare the security concerns of online users of other world countries. A larger sample size could be used to provide more generalized results. The study could be extended to examine whether these bad experiences encountered by the users had been resolved by their respective online vendor. This is important to ensure a quality online experience to the users.

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**APPENDIX/ANNEXURE****QUESTIONNAIRE ON SECURITY CONCERNS OF ONLINE TRANSACTIONS:****Dear Participant**

The Questionnaire is designed to examine the security concerns of the users of online transactions. The objective of this study is purely educational in nature, your personal identity and preferences will be kept confidential.

Thank you for considering participating in this study. We appreciate your time and effort.

1. Name \_\_\_\_\_
2. Email id : \_\_\_\_\_
3. Gender :
  - a. Male
  - b. Female
4. Age :
  - a. Below 20
  - b. 20 and below 30
  - c. 30 and below 40
  - d. 40 and below 50
  - e. Above 50
5. Highest Educational Qualification :
  - a. Below 12<sup>th</sup>
  - b. 12th Pass
  - c. Graduation
  - d. Post Graduation
  - e. Professional qualification(Please specify) \_\_\_\_\_
  - f. Others(Please specify) \_\_\_\_\_
6. To what extent do you agree that online transactions are secured transactions?
  - a. Strongly agree
  - b. Agree
  - c. No Opinion
  - d. Disagree
  - e. Strongly Disagree
7. Please tick the appropriate option that best describes your level of concern about each of the negative events described below while conducting an online transaction:
 

	Very much concerned	Somewhat concerned	Not very concerned
My credit card information being stolen			
Having my Username and Password stolen			
Receiving emails that contain links that send me to the wrong (phishing) site			
Receiving emails from sources I do not know			
Having Banker reveal my personal and financial information to a third party			
8. Do you read the Terms and Conditions of online shopping / transaction before you proceed?
  - a. Yes
  - b. No
9. Which of the following bad experiences you have encountered while transacting online?
  - a. Faulty product
  - b. Delay in delivery
  - c. Payment issues
  - d. Identity theft



- e. No bad experience
10. Which of the following describes actions you regularly take to reduce the chances of your personal and financial information being stolen? (Please tick all that applies)
- a. I always check the URL of links I receive in emails before clicking on them
  - b. I regularly change my passwords
  - c. I use low limit credit cards when transacting on the Internet
  - d. I never use a payment method that allows access to my bank account
  - e. I use a service that makes my identity anonymous when transacting online
  - f. I use a service that provides replacement credit cards I am not liable for
  - g. I go for transactions with cash on delivery option only
  - h. Others (Please specify) \_\_\_\_\_



**CORPORATE GOVERNANCE: AN ANALYSIS OF LEGAL FRAMEWORK AND INDIAN GOVERNANCE SYSTEM****NITIN KUMAR****S/O SITA RAM****R/O HOUSE NO. 89, NEAR PARK NO.-2****VILLAGE & POST OFFICE - SAMASPUR, DISTRICT GURGAON****ABSTRACT**

Corporate Governance is about promoting corporate fairness, transparency and accountability. It is the ethical practice of corporate administration where the interests of shareholders and other stake holders are always given high priority. Today, the term Corporate Governance is the buzzword in global business and regulatory communities. The growing interest in corporate governance practices around the world has also reached India, both from positive and normative perspectives. In a liberalising and deregulating country like India, corporate governance is all the most important. India now ranks as the tenth-largest economy in the world and third largest in terms of GDP on PPP basis. According to BRIC report (Global Paper 99), India has the potential to raise its per capita ( US dollar) to 35 times in 2050 compared to its current levels thus making it one of the most attractive market for the FDI's and MNC's. India has been ranked in the seventh place in terms of corporate governance score in Asia Pacific region, says a report by global brokerage firm CLSA. In India, SEBI (Security Exchange Board of India) has taken up the task of building the regulatory norms for the smooth functioning of the companies. It has been suggested that the Indian approach of corporate governance is drawn from the Gandhian principle of trusteeship and the Directive Principles of the Indian Constitution. The present paper aims at reviewing the various developments and present framework in corporate governance in India.

**KEYWORDS**

Companies Act, 2013, Corporate Governance, SEBI, Stakeholders.

**JEL CLASSIFICATION CODE**

G3

**INTRODUCTION**

In simple terms, Corporate Governance refers to the set of laws, rules, systems, principles, process by which a company is governed. Corporate governance is based on principles such as conducting the business with all integrity and fairness, being transparent with regard to all transactions, making all the necessary disclosures and decisions, complying with all the laws, accountability and responsibility towards the stakeholders and commitment to conducting business in an ethical manner. Another point which is highlighted in the SEBI report on corporate governance is the need for those in control to be able to distinguish between what are personal and corporate funds while managing a company.

Only with better corporate governance rules and practices can higher levels of investor trust and confidence be achieved—and with this, a more robust economic development. The best practices of corporate governance are important not only for public or shareholders, but also for the very existence of the company itself. Unless a corporation embraces and demonstrates ethical conduct, it will not be able to succeed.

Now the question arises: why don't firms, markets, and countries adjust and voluntarily adopt better corporate governance measures? The answer is that firms, markets, and countries do adjust to some extent, but that these steps fail to provide the full impact, work imperfectly, and involve considerable costs. Although SEBI has been propagating the importance of Corporate Governance for a long time but there has not been much success. However the signs are more promising this time. A small but growing class of activist shareholders has emerged in India, which will add heft to the fight for greater corporate transparency. It has become a movement for survival and growth of Corporates in the era of globalization and liberalization. Following the recently amended companies law that put the spotlight on corporate governance issues, Sebi's latest directives can help raise the bar on corporate governance in India.

**OBJECTIVES OF THE STUDY**

- To understand the concept of Corporate Governance
- To analyse various developments and present framework in Corporate Governance in India.
- To examine the legal provisions on Corporate Governance in India.

**RESEARCH METHODOLOGY**

The study has been conducted with an objective to analyse developments and present framework in Corporate Governance in India. To have insight of the topic Corporate Governance secondary sources have been adopted for study. Various newspapers, Journals, Articles, websites and books have been accessed to collect the information for study.

**CORPORATE GOVERNANCE**

A basic definition of corporate governance, which has been widely recognized, was given in a report by the committee under the chairmanship of Sir Adrian Cadbury tiled (the Cadbury Report):

"Corporate governance is the system by which companies are directed and controlled. The boards of directors are responsible for the governance of their companies. The shareholder's role in governance is to appoint the directors and the auditors to satisfy themselves that an appropriate governance structure is in place. The responsibilities of the board include setting the company's strategic aims, providing the leadership to put them into effect, supervising the management of the business and reporting to shareholders on their stewardship. The board's actions are subject to laws, regulations and the shareholders in general meeting." <sup>1</sup> Source: Cadbury report, European Corporate Governance Institute

"Corporate Governance is the application of best Management practices, Compliance of law in true letter and spirit and adherence to ethical standards for Effective Management and distribution of wealth and discharge of social Responsibility for sustainable development of all stakeholders." <sup>2</sup> Source: ICSI definition of corporate Governance.

**EVOLUTION OF CORPORATE GOVERNANCE FRMEWORK IN INDIA**

In order to ensure the credibility of capital market and to facilitate the flow of investment finance of firms, there have been various reforms made through the Security and Exchange Board of India (SEBI), the Ministry of Corporate Affairs (MCA) and Government of India.

**A. CORPORATE GOVERNANCE IN INDIA IS DERIVED FROM THE VARIOUS LEGAL AND REGULATORY FRAMEWORKS COMPRISING OF THE FOLLOWING:** <sup>3</sup>

- Companies Act, 1956 (Replaced by new Companies Act, 2013)
- Monopolies and Restrictive Trade Practices Act, 1969 (Replaced by new Competition Act, 2002)
- Foreign Exchange Management Act, 2000
- Securities and Exchange Board of India Act, 1992

- Securities Contract Regulation Act, 1956
- The Depositories Act, 1996
- SEBI Code on Corporate Governance
- Clause 49 of the Listing Agreement (SEBI 2005)

These laws have been introduced and amended, from time to time, to bring more transparency and accountability in the provisions of corporate governance. That is, corporate laws have been simplified so that they are amenable to clear interpretation and provide a framework that would facilitate faster economic growth.

#### B. COMMITTEE ON CORPORATE GOVERNANCE

Various committees have been formed with a view to reforming the Corporate Governance in India since 1990s. Some of the recommendations of these committees are highlighted below:<sup>4</sup>

- CII Code of “desirable corporate governance” (1998)
- UTI code of governance (1999)
- Kumar Mangalam Birla Committee on Corporate Governance (2000)
- Naresh Chandra Committee (2002)
- Narayan Murthy Committee (2002)
- J.J. Irani Committee (2004)

### CORPORATE GOVERNANCE INITIATIVES IN INDIA

Faced with a fiscal crisis in 1991, the Indian Government responded by enacting a series of reforms aimed at general economic liberalization. The Securities and Exchange Board of India (SEBI)—India’s securities market regulator—was formed in 1992, and by the mid 1990s, the Indian economy was growing steadily, and Indian firms had begun to seek equity capital to finance expansion into the market spaces created by liberalization and the growth of outsourcing.

The need for capital, amongst other things, led to corporate governance reform and many major corporate governance initiatives were launched in India since the mid 1990s, most of these initiatives were focused on improving the governance climate in corporate India. Like, Incorporation of SEBI with a stated aim of creating open and participative markets and its fair success in managing the markets in what has been clearly a very dynamic and challenging decade for them; the new Companies Bill with an explicit emphasis on promoting best practices in corporate governance and MCA’s more active redefined role in it; RBI’s notable management of the Indian banking sector in the last few years of widespread failures in the financial sector in other parts of the world.

#### 1) CONFEDERATION OF INDIAN INDUSTRY “DESIRABLE CODE ON CORPORATE GOVERNANCE” (1998)

Desirable Corporate Governance – A Code In 1996, Confederation of Indian Industry (CII) took a special initiative on corporate governance – the first institutional initiative in Indian Industry. The committee submitted its report in April 1998 comprising of 17 recommendations such as board comprising of independent and nonexecutive directors, enhanced disclosure to shareholders, restriction on the number of directorships of listed companies, reporting of material information to the Board, formation of Audit committee etc Although this code was a significant step, it failed to make the desired change in the governance landscape primarily because of its voluntary nature.

#### 2) SEBI KUMAR MANGALAM BIRLA COMMITTEE (1999)

The SEBI appointed a Committee on Corporate Governance on May 7, 1999 under the chairmanship of Shri Kumar Manglam Birla, to promote and raise the standards of corporate governance mainly from the perspective of the investors and shareholders and to prepare a code to suit the Indian corporate environment. The first formal regulatory framework for listed companies specifically for corporate governance was established by SEBI in February 2000, following the recommendations of Kumar mangalam Birla Committee Report. It was enshrined as Clause 49 of the Listing Agreement.

#### 3) MCA NARESH CHANDRA COMMITTEE (2002)

The Naresh Chandra committee was appointed on August 21, 2002 by the Department of Company Affairs (DCA) under the Ministry of Finance and Company Affairs, to examine various issues of corporate governance relating to statutory auditor- company relationship, rotation of statutory audit firm or partners, appointment of auditors and determination of audit fees, independence of auditing functions, certification of accounts and financial statements by management and directors role of independent directors etc. The Committee submitted its report in December 2002. It made recommendations in terms of two key aspects of corporate governance: financial and non-financial disclosures, and independent auditing and board oversight of management.

#### 4) SEBI NARAYAN MURTHY COMMITTEE (2003)

The fourth initiative on corporate governance in India is in the form of the recommendations of the Narayana Murthy Committee. This committee was set up in late 2002, by SEBI under the chairmanship of Mr. N.R. Narayana Murthy, in order to review Clause 49, and to suggest measures to improve corporate governance standards. Some of the major recommendations of the committee primarily related to audit committees, audit reports, independent directors, related party transactions, risk management, directorships and director compensation, codes of conduct and financial disclosures. These recommendations were reinforced through revising Clause 49 which came into effect from Jan 1, 2006.

#### 5) MCA J.J. IRANI COMMITTEE (2004)

The review and redrafting of the Companies Act, 1956 was taken up by the Ministry of Corporate Affairs (MCA) on the basis of a detailed consultative process and the Government constituted an Expert Committee on Company Law under the Chairmanship of Dr. J.J. Irani on 2 December 2004 to offer advice on the new Companies Bill. The committee submitted its report in May 2005 covering a wide range of issues such as introducing the concept of new types of companies, introduction of e-governance facilities, detailed disclosure, definition and number of independent directors, Audit Committee independence, concept of Key Managerial personnel and investor protection.

In 2009, CII formed a task force headed by former cabinet secretary Naresh Chandra which came out with its report enumerating a set of voluntary recommendations with an objective to establish higher standards of corporate governance in the country.

In 2010, SEBI instituted amendments in the Listing Agreement to address disclosure and accounting concerns. SEBI also made some policy changes for better governance of listed companies such as disclosure of promoters pledging of shares, peer reviewed auditor, appointment of CFO by audit committee, disclosure of voting rights, mandatory e-voting facility.

In March 2012, a committee under the Chairmanship of Mr. Adi Godrej, Chairman, Godrej Industries Limited was constituted, by Ministry of Corporate Affairs to formulate policy document on Corporate Governance. In September, 2012 the Committee submitted its document, specifying seventeen guiding principles on corporate governance.

Additionally, the Institute of Company Secretaries of India (ICSI) came out with recommendations to strengthen corporate governance framework in the country in 2010. To achieve excellence in various secretarial practices for good corporate governance ICSI has issued following Secretarial standards:

- SS-1 Secretarial Standard on Meetings of the Board of Directors
- SS-2 Secretarial Standard on General Meetings
- SS-3 Secretarial Standard on Dividends

The institute has also taken initiatives to awaken Indian Corporate Sector in Corporate Governance. For this purpose, the Institute since 2001 is conferring ‘ICSI National Award for Excellence in Corporate Governance’ annually to the participating companies in order to promote corporate governance culture in Indian corporate sector.

The Accounting Standards issued by The Institute of Chartered Accountants of India (ICAI) serve the objective of reducing uncertainty and increasing overall efficiency and investor confidence.

## FEW RECENT INITIATIVES

Several initiatives have been taken up recently, with the goal of promoting better corporate governance practices in India after several companies were found flouting rules on continuous listing requirements. Some of these are: <sup>5</sup>

- New Companies Act – inducing good CG practices through self regulation, responsive legal framework based on shareholders' democracy; disclosure based regime; rational penal provisions with built-in deterrence and effective protection
- SEBI – Clause 49 – Appointment of Independent Directors, Audit committee, Code of conduct, disclosures of related party transactions, remunerations, compliance of accounting standards, certifications of CEO & CFO, Compliance Certification & Whistle-blower policy;
- Notification of Accounting Standards with a view to bring the disclosure norms in tune with the international reporting standards;
- Introduction of LLPs; transformation in the service delivery mechanism for transparency and certainty – low-cost, easy compliance;
- Launching of websites – [www.investorhelpline.in](http://www.investorhelpline.in) and [www.watchoutinvestors.com](http://www.watchoutinvestors.com) ;
- Setting up of National Foundation for Corporate Governance (NFCG) in partnership with Confederation of Indian Industry (CII), Institute of Company Secretaries of India (ICSI) and Institute of Chartered Accountants of India (ICAI).
- Empowerment of investors through the medium of education and information with the help of investor associations, VO's, NGOs, etc.;

## COMPANIES ACT 2013 & CORPORATE GOVERNANCE

The introspection that followed the Satyam episode has resulted in some major changes in Indian corporate governance regime and the most important development is the Companies Act, 2013 (Replacing the nearly 60-year-old Companies Act, 1956).

The much awaited Companies Bill, 2012 was passed by the upper house of Parliament on 8 August 2013 and received president's assent on 29th Aug, 2013. It has the potential to be a historic milestone, as it aims to improve corporate governance, simplify regulations, enhance the interests of minority investors and for the first time legislates the role of whistle-blowers. The Act encourages good governance practices by placing the onus on independent directors to bring oversight in the functioning of the Board and protect the interest of minority shareholders.

The Companies Act, 2013 is a move by the government to strengthen the corporate governance framework in a country. The purpose was to simplify the law, provide principles covering all aspects of governance of corporate entities and a framework for their administration in a single legislation.

The 2013 Act contains a number of provisions which have significant implications on Governance of the companies. The Act stipulates enhanced self-regulations coupled with emphasis on corporate democracy and provides for amongst others, business friendly corporate regulation, e-governance initiatives, good corporate governance, Corporate Social Responsibility (CSR), enhanced disclosure norms, enhanced accountability of management, stricter enforcement, audit accountability, protection for minority shareholders, investor protection and activism and better framework for insolvency regulation and institutional structure. In the following section, we look at the corporate governance changes effected by the present Act.

## KEY CHANGES AND DEVELOPMENTS IN THE COMPANIES ACT, 2013 HAVING IMPACT ON COMPLIANCE AND GOVERNANCE

- Enhanced disclosure norms;
- Higher Auditor Accountability;
- Easier Restructuring;
- Wider Director and Management Responsibility;
- Prohibition of insider trading;
- Inclusive CSR Agenda; and
- Emphasis on Investor Protection;

Market regulator The Securities and Exchange Board of India (SEBI) in February, 2014 came out with detailed corporate governance norms for listed companies providing for stricter disclosures and protection of investor rights which would be effective from October 1, 2014. Sebi's norms are aligned with the new Companies Act and are aimed to encourage companies to "adopt best practices on corporate governance".

## KEY CORPORATE GOVERNANCE RULES ISSUED BY SEBI

- Enhanced disclosures about the remuneration of senior executives;
- Setting up of a system to evaluate the performance of independent directors and other board members;
- At least one woman director on the board of every company, Which was already mandated under the Companies Act;
- A compulsory whistle-blower mechanism in every company;
- Prohibition of stock options to independent directors;
- A separate meetings of independent directors;
- Seeking the approval of shareholders for all material related-party transactions through a vote on special resolution;

## CONCLUSION

In this paper, we try to shed light on the Commitment to the highest standards of ethics and integrity, which should be an uncompromising principle of every corporation.

Unfortunately, corporate governance often becomes the centre of discussion only after the exposure of a large scam. We had the Harshad Mehta Scam, Ketan Parikh Scam, UTI Scam, Vanishing Company Scam, Bhansali Scam and so on. Corporate laws need to be simplified so that they are amenable to clear interpretation and provide a framework that would facilitate faster economic growth. The recent moves of India's capital market watchdog, Securities and Exchange Board of India (Sebi) to improve corporate governance norms of listed companies must therefore be seen as a welcome step in that direction. The new act 2013 is also seen as an important step in bringing Indian economy closer to global standards and in improving the ease and efficiency of doing business in India. However, there is still a need to focus on developing more appropriate solutions that will evolve from within and therefore address the India-specific challenges more efficiently.

India has one of the best Corporate Governance legal regimes but poor implementation together with socialistic policies of the pre-reform era has affected corporate governance. There is a need to speed up the process of implementation by strengthening existing institutions and creating new institutions, if required. In the years to come, corporate governance will become more relevant and a more acceptable practice worldwide. Thus it is necessary for the Corporates to ensure that they follow the law not just in letter but in spirit also as the true value of Corporate Governance lies beyond compliance.

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## WORD TRANSLATION DISAMBIGUATION

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**ABSTRACT**

*This paper have how Anusaaraka machine translation translate English language to Hindi language. Here we use the word sense translation for word-sense disambiguation (WSD) because one language translated into another language. WSD is an open problem of natural language processing, which governs the process of identifying which sense of a word (i.e. meaning) is used in a sentence, when the word has multiple meanings. The solution to this problem impacts other computer related writing, such a discourse, improving relevance of search engines anaphora resolution, coherence, inference etcetera.*

**KEYWORDS**

Anusaaraka, word sense disambiguation, rule based approach, machine translation.

**INTRODUCTION**

Research has progressed steadily to the point where WSD systems achieve sufficiently high levels of accuracy on a variety of word types and ambiguities. A rich variety of techniques have been researched, from dictionary-based methods that use the knowledge encoded in lexical resources, to supervised machine learning methods in which a classifier is trained for each distinct word on a corpus of manually sense-annotated examples, to completely unsupervised methods that cluster occurrences of words, thereby inducing word senses. Among these, supervised learning approaches have been the most successful algorithm to date.

The system promises to give faithful representation of the translated text, no loss of information while translation and graceful degradation (robustness) in case of failure. The layered output provides an access to all the stages of translation making the whole process transparent.

**ANUSAARAKA**

Anusaaraka is open source free software. Anusaarakas among Indian languages were developed in the last decade of the 20th century and later on the developers concentrated their efforts on building English-Hindi Anusaaraka. The English-Hindi Anusaaraka, like other Anusaarakas, is a Machine Translation and Language Accessing software that takes ingenious concepts for language analysis from Panini's Astadhyayi (Eight chapters on Sanskrit grammar) to build a robust and reliable tool. The Anusaaraka concept of layered output has proved useful in giving 100% access to information in the source language text. With a little training, a serious user can trace back to the information in the Source text by looking at the various layers of Anusaaraka output, word level coding, word group level encoding, phrasal level coding, and sentence level coding, etc. Anusaaraka derives its name from the Sanskrit word 'Anusaran' which means 'to follow'.

One question will arise in your mind why we are not using word sense disambiguation in this paper. The answer is word translation Disambiguation terminology translate source language to target language. Many problems arose translation such as

- **Ordering problem**

Example: English sentence "Shana reading a book."

Parallel translation: SanA pada rahl hai ek kitAba.

Hindi translation: SanA ek kitAba pada rahl hai.

In hindi verb comes at end but in English verb always comes in middle.

Anusaaraka resolve this problem with the help of relation table which based on Paninian Grammar.

- **Gender number problem**

Shana is reading a book.

SanA ek kitAba pada rahl hai.

Gautum is reading a book.

Gautama ek kitAba pada rahA hai

Above sentences are same only name is different one is girl and another is boy. So verb is same for both English sentences but in Hindi verb is change.

**METHOD FOR TRANSLATION**

Translation is very difficult task because source language and target languages have different syntax and different grammar rules. So Anusaaraka follows some algorithm for translation English language to Hindi language.

**Algorithm**

```
{
Input file English translation (should be in text format.)
Call operatium platform (English Language)
{
Do the initial analysis of the source text which includes morphological analysis, POS tagging and chunking.
}
Call CLIP Expert system shell
{
Make WTD Rule for English word
}
Call operatium platform (Target Language)
{
Final formatting and displacing the surface form of the target language.
}
Output (Target language)
}
```

We can understand its working with the help of example and for Hindi Anusaaraka use "wx" notation so in this paper wx notation use for Hindi translation or meaning.

1) **Input file English translation**

To prepare lunch.

Dopahara kA KAnA banAnA.

2) **Call operatium platform (English Language)****Step 1.** Divide into one word

English sentences have three words

To, prepare, and lunch.

Note: If there is any apostrophe s then it counts as one word such as He is Shana's father. Similarly for comma and full stop.

**Step 2.** POS tagging

To- preposition, prepare- verb, lunch- noun.

3) **CLIP Expert system**

Word translation disambiguation module determines the final Hindi meaning of a ambiguous English word. This module uses the information from morph Analyser, POS tagger and Paninian relations , position and semantic property of the word to disambiguate to a final Hindi meanings. This module consists of thousands of manually written rules in CLIPS environment. The rule data-base is made up of two types of rules. One is the generalised rule comes with the Anusaaraka software package and the other one is provisional (user given) rules. Higher priority is given to the provisional rules, than the system rules. If no rule is present for a word, the default Hindi meaning is chosen from the bilingual dictionary. Multi words are also translated with the help of a multi word dictionary. The rules are in CLIPS language, which can be written directly in CLIPS or through a web-interface available over Internet for the users to contribute towards enriching the WSD rule database. User has to fill up the forms using different facts available for the given word. These forms when saved, automatically converts the facts into CLIPS format rules.

For make wtd rule first collect all parallel corpus to word prepare then collect all possible hindi meaning of that word then trying to minimize these meaning as possible. Then construct the rule for reaming meaning of word prepare.

Find out all the relation of prepare word and other word of the sentences with the help of relation table which is based on paninian grammar. This relation table mapped the English relation and Hindi relation. Parser defines the English relation then relation table according to this parser relation define the Hindi relation. Our rule based on this Hindi (Paninian grammar) relation. For example: kriyA-Subject relation, KriyA-Object relation, Subject-Subject relation etc. Sometime parser also mistake then we analyse that mistake and with the help of English grammar remove that mistake. For example not identify the category of the word or wrong relationship show between any relations and so on.

When we make rule then we also use our mind and that relationship because these relationship gave the idea to construct the rule and our mind analyse that relation is correct or not, if correct the make rule otherwise first of all correct that relation then construct rule or that word according to the relation.

Whenever disambiguate the meaning of word then write the manual rule in CLIP language and cover all the senses. Word "prepare" have many meaning in different context but category of that word always verb. When we are writing rule then we are always trying to minimize the senses of that word. But here all meaning is necessary so we have eight senses of word prepare. So here we construct eight rules and one rule of these rules becomes default rule which is most frequent meaning. Here "wEyAra\_kara" is the default meaning.

Here take example for word "prepare" it have many meaning in Hindi. So we disambiguate its meaning with the help of manual rules and also try to minimize the senses of word.

**Meaning**

1. wEyAra\_kara

2. banA

3. racanA\_kara

4. savaXAna\_kara

5. pakA

6. sajA

7. praswuwa\_kara

8. Tilka\_kara

For example here we gave three rule for word prepare where two normal and one is default (If any rule nor fire then at least this default rule will be fire, so every clip file have default rule.

Default rule has no salience).

Rule for word prepare: To prepare lunch.

Hindi meaning: banana.

Whenever make rule then this rule have root meaning such as banA is the root word of banana.

Dopahara kA KAnA banAnA.

(defrule prepare1

(declare (salience 1700))

(id-root ?id prepare)

?mng <-(meaning\_to\_be\_decided ?id)

(or(to-infinitive ? ?id)(kriyA-in\_saMbanXI ?id ?))

(id-cat\_coarse ?id verb)

=>

(retract ?mng)

(assert (id-wsd\_root\_mng ?id banA))

(if ?\*debug\_flag\* then

(printout wsd\_fp "(dir\_name-file\_name-rule\_name-id-wsd\_root\_mng " ?\*prov\_dir\* " prepare.clp prepare2 " ?id " banA)" crlf))

)

Rule for prepare: The first task was to prepare an, election manifesto.

Meaning: wEyAra\_kara

(defrule prepare2

(declare (salience 1600))

(id-root ?id prepare)

?mng <-(meaning\_to\_be\_decided ?id)

(id-cat\_coarse ?id verb)

(id-cat\_coarse ?id1 verb)

(id-cat\_coarse ?id2 adjective)

(or(and(kriyA-kriyArWa\_kriyA ?id ?id1)(viSeRya-viSeRaNa ?id2 ?id))(and(kriyA-object ?id ?id1)(viSeRya-viSeRaNa ?id2 ?id)))

=>

(retract ?mng)

(assert (id-wsd\_root\_mng ?id wEyAra\_kara))

```

(if ?*debug_flag* then
(printout wsd_fp "(dir_name-file_name-rule_name-id-wsd_root_mng " ?*prov_dir* " prepare.clp prepare3 " ?id " wEyAra_kara )" crlf))
)
Default rule also have same meaning as rule2 because meaning of this word is most frequent wEyAra_kara. It has not any condition.
Default rule for meaning wEyAra_kara
(defrule prepare0
(id-root ?id prepare)
?mng <-(meaning_to_be_decided ?id)
(id-cat_coarse ?id verb)
=>
(retract ?mng)
(assert (id-wsd_root_mng ?id wEyAra_kara))
(if ?*debug_flag* then
(printout wsd_fp "(dir_name-file_name-rule_name-id-wsd_root_mng " ?*prov_dir* " prepare.clp prepare0 " ?id " wEyAra_kara )" crlf))
)
4) Call operatium platform (Target Language)
After constructing clip file operatium platform perform many TAM (Tense, Aspect and Modality) related work.
5) Output: Anusaaraka gives the layed output it gives 100% access to information in the source language text.

```

FIGURE 1: ANUSAARAKA LAYERED OUTPUT

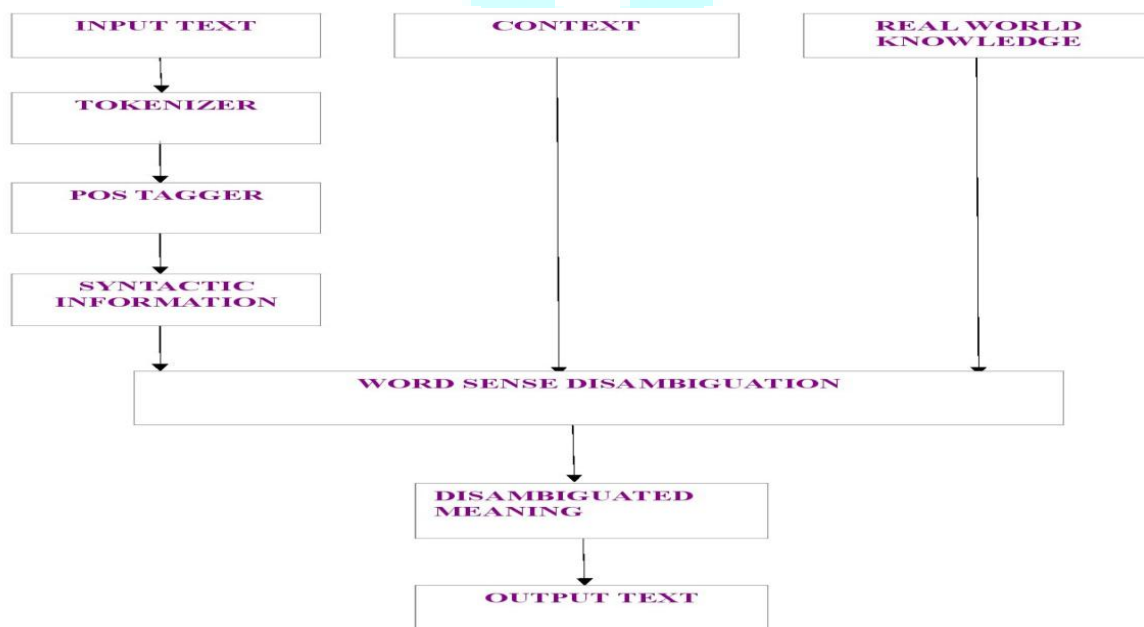
The screenshot shows a web browser displaying the Anusaaraka layered output. On the left, a text document is open, showing a paragraph about preparing an election manifesto. On the right, a table displays the word sense disambiguation results for the words in the text. The table is organized into columns for the word, its sense, and the corresponding Hindi translation. Below the table, a list of numbered items provides further details about the disambiguation process.

Word	Sense	Hindi Translation
1.1.A Prepare.	1.1.B -	1.1.C तैयार-करना2 {0}.
1.1.I तैयार कर {कुम्पर}.	1.1.K तैयार कीजिए.	
2.1.A The first task	2.1.B -	2.1.C प्रथम नियत-कार्य {0} था
2.1.I प्रथम काम था {या}.	2.1.K प्रथम काम था	
2.2.A LSD is	2.2.B -	2.2.C एल एस डी प्रयोगशाला {0}.
2.2.I एल एस डी है	2.2.K एल एस डी है	
2.3.A The artists	2.3.B -	2.3.C गायक/गायिका/नर्तकी {0} स्वयं {वे}.
2.3.I गायक खुद	2.3.K गायक	

1.1 तैयार कीजिए .  
2.1 प्रथम काम , चुनाव घोषणा पत्र बनाने वाला था .  
2.2 एल एस डी प्रयोगशाला में तैयार रहना अत्यन्त आसान है .  
2.3 गायक खुद खेलों के लिये जरूरी हुई हुई पुतलियाँ तैयार करते हैं जिन्हें वे बनाते हैं .  
2.4 इस प्रकार, डिम्बक सुरक्षा और पर्याप्त का उनका अपना आवास तैयार करते हैं .

All process we easily understand with the help of Anusaaraka process step figure.

FIGURE 2: ANUSAARAKA PROCESS STEP FIGURE



6) **RESULT**

Select randomly twelve sentences of word prepare, and then we run these sentences at bleu software. The graph and table show the result.

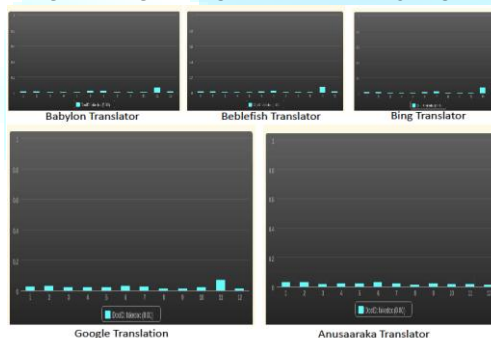
**GRAPH 1: ANUSAARAKA TRANSLATION GRAPH ON IBLEU.****TABLE 1: GRAM COUNT FOR ANUSAARAKA TRANSLATOR**

Type	1-gram	2-gram	3-gram	4-gram
Individual	0.0960	0.0027	0.0014	0.0008
Cumulative	0.0917	0.0153	0.0069	0.0039

Table show the result and 1-gram is good result for this translator

**Comparison**

Method: I take randomly twelve English sentences from online parallel corpus. These sentences run on different translators which are available online and compare with our Anusaaraka translator. Then we show the result with the help of graph.

**GRAPH 2: GRAPH FOR DIFFERENT TRANSLATOR**

This graph shows the result of different translation. The graph shows all the translators are same but anusaaraka translation different from that. The Anusaaraka concept of layered output has proved useful in giving 100% access to information in the source language text. Sentence no eleven has more score from others in four translators but anusaaraka has not. Every Translator has only one meaning of word prepare but Annusaaraka has different meaning of same word "prepare" regarding to context.

**TABLE 2: GRAM COUNT FOR TRANSLATOR**

Translator	Type	1-gram	2-gram	3-gram	4-gram
Anusaaraka	Individual	0.0960	0.0027	0.0014	0.0008
	Cumulative	0.0917	0.0153	0.0069	0.0039
Babylon	Individual	0.0455	0.0161	0.0057	0.0031
	Cumulative	0.0455	0.0271	0.0162	0.0107
Bablefish	Individual	0.0505	0.0161	0.0057	0.0031
	Cumulative	0.0505	0.0285	0.0167	0.0110
Bing	Individual	0.0505	0.0161	0.0057	0.0031
	Cumulative	0.0505	0.0285	0.0167	0.0110
Google	Individual	0.1061	0.0161	0.0057	0.0031
	Cumulative	0.0983	0.0383	0.0199	0.0122

Built all possible rules of prepare word, if this word have give the different meaning to compound word those word also add on that CLIP file.

For example:

To prepare lunch.

Dopahara kA KAnA banAnA.

She was busy preparing lunch.

Vaha dopahara kA KanA banane me vayasaWa WI.

**FUTURE SCOPE**

Anusaaraka translator is very useful for those peoples who have not user friendly with English. More population of India have mother tongue is Hindi so they are not understand English properly. This is also very useful of those students whose background is Hindi medium.

It is open source free software so everyone use it without pay money. Any organization it can be use for translation purpose, so with the help of this software organization save the valuable time and money. Everything will be available in Hindi language in wikipedia or other websites. Its future is too bright.

**CONCLUSIONS**

Word translation disambiguation gives the correct meaning of the every word but full meaning of sentences has sometime ordering problem. But this problem is not a big issue for translation because it gives the correct sense related to the context. Anusaaraka English-Hindi machine translation is open source free software so everyone use it. Its demo session is online and after sometime it will launch then every people use it with online or off line.

**ACKNOWLEDGMENT**

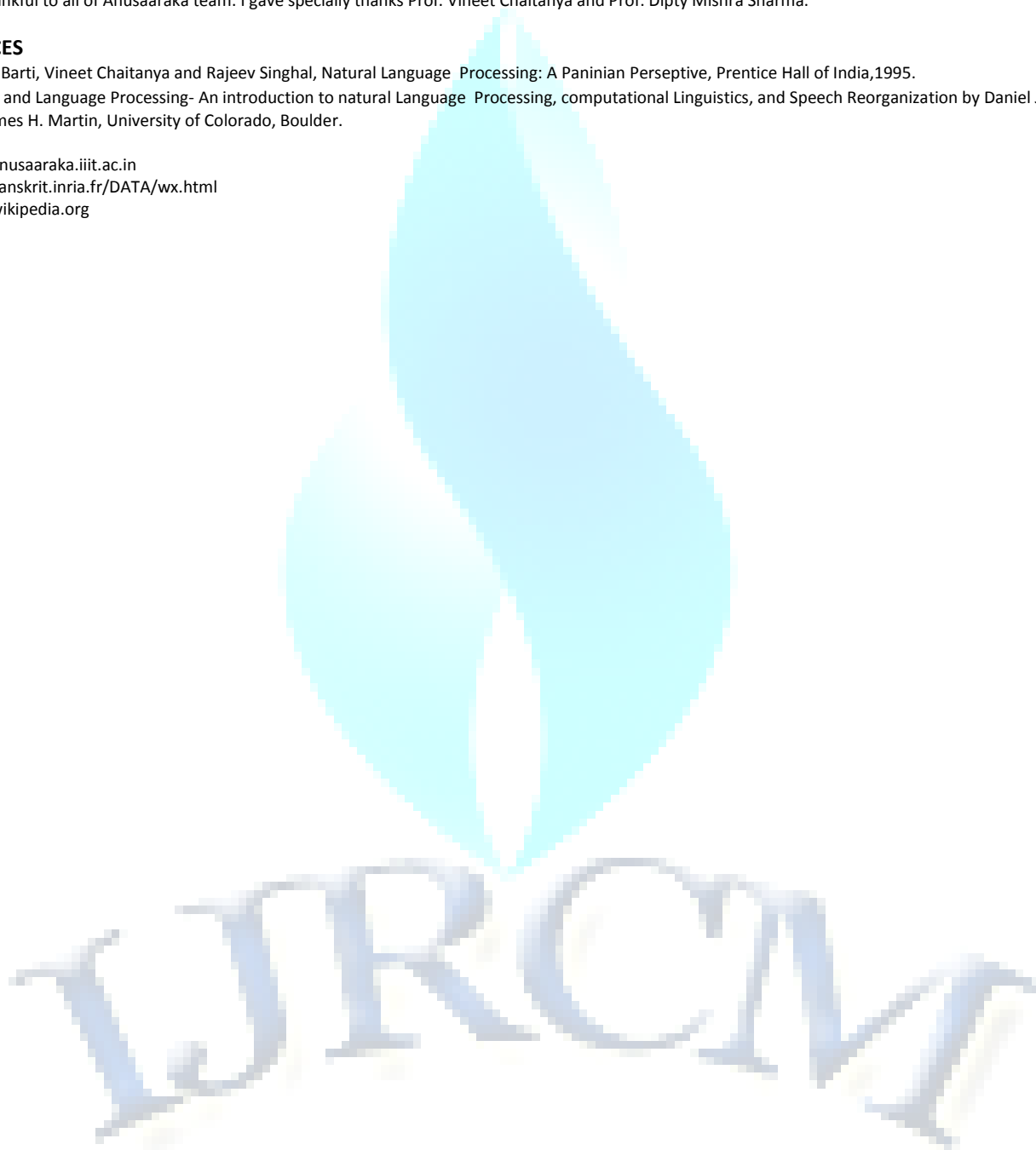
I am very thankful to all of Anusaaraka team. I gave specially thanks Prof. Vineet Chaitanya and Prof. Dipty Mishra Sharma.

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# DETERMINANTS OF CORPORATE CAPITAL STRUCTURE: WITH SPECIAL REFERENCE TO HOME APPLIANCES INDUSTRY IN INDIA

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## ABSTRACT

*The optimum capital structure has been defined as combination of both debt and equity that leads to maximum value of the firm at minimal cost of capital. The capital structure decision can influence the value of the firm through the earnings available to the share holders which maximizes the shareholders wealth, in addition to this capital structure can affect the value of the company by improving its expected earnings. The importance of an appropriate capital structure is, thus, obvious. Main factors influencing Capital Structure have been studied in this paper to identify the extent of their effect on capital structure of a firm. The main purpose is to examine whether and how Capital Structure effect of ten financial variables take place. The impact of ten financial variables namely: size, profitability, asset structure, business risk, debt service, agency cost, bankruptcy ratio, growth, tax shield and uniqueness will be studied on capital structure represented by  $LEV_{D/E}$ . The study attempts to analyze the important determinants of capital structure in home appliances sector in India. The data for analysis is drawn from company's official websites for a period of 2003 to 2013; data of listed companies of home appliances sector has been taken for analysis. Data is analyzed on the basis of multiple regression models. It is concluded that size of the firm, growth opportunity and uniqueness of the firm has significant relationship with capital structure of home appliances industry in India.*

## KEYWORDS

Capital Structure, leverage, profitability, asset structure, business risk, debt service, agency cost, bankruptcy ratio, growth and uniqueness.

## 1. INTRODUCTION

The optimum capital structure has been defined as a combination of both debt and equity that leads to the maximum value of the firm and where overall cost of capital is minimum. This is still one of the most debatable issue in the corporate finance research since Modigliani and Miller's (1985) irrelevance proposition. While this proposition has derived various conditions under which capital structure is irrelevant for investment, subsequent theoretical and empirical evidences have shown that a firm can influence its value and future investment by varying in capital structure. The capital structure decision can influence the value of the firm through the earning available to the share holders which maximizes the share holders' wealth. Capital structure can affect the value of company by affecting either its expected earnings or the cost of capital or both. While it is true that financing mix cannot affect the total earning of the firm as they are determined by the investment decisions, it can affect the share of earnings belonging to the ordinary shareholders. The mixing process depends upon the cost and benefits of debts and equity financing in that period. The pecking order theory of capital structure can explain why the most profitable firms tend to borrow less. Less profitable firms first issue debt because it has lower flotation and information costs compared to equity is issued only as a last resort, when the debt capacity is fully exhausted. Tax benefits of debts are a second order effect. Therefore, the debt ratio changes when there is an imbalance between internal funds and real investment opportunities and there is information asymmetry in the market (Myers and Majluf, 1984) [23]. High degree of information asymmetry increases the leverage due to the absence of informational cost in the form of debt financing. The optimal capital structure is usually involve some debt, but not cent percent debt. Generally, some firms cannot identify this optimal point precisely, but they should attempt to find an optimum range for capital structure.

## 2. LITERATURE REVIEW

Rao (2001) made an attempt to explain the variation of capital structure across industries in India during pre and post liberalization regime and also examine if there is any significant change in average industry level capital structure during post liberalization regime. The study is based on industry wise data of 85 industries in manufacturing sector the results shows that there has been significant decrease in leverage during post liberalization regime and there has been change in set of explanatory variables for capital structure. The most significant explanatory variables for capital structure during pre liberalization regime were the measure of profitability, risk and asset type. During post liberalization regime measure of profitability, growth and asset type were the most significant variables.

Bhaduri (2002) studied the capital structure choice in developing countries through a case study of Indian corporate sector, for the period 1989-90 to 1994-95, based on a sample of 363 firms across nine industries. The author has reported optimal capital structure choice is influenced by factors such as growth, cash flow size and product industry and characteristics.

Multiple linear regression model. The study found significant variation in debt-equity ratio in industrial sector. The cement sector showed the highest debt equity ratio. The size of the firm was not found to be significant for leverage tax shield and depreciation was found to be positive correlated between debt equity ratio and flexibility.

Bhayani (2005) examined the capital structure of Indian private corporate sectors. The investigation has been performed using panel data procedure for a sample of 504 Indian companies listed on any stock exchange from 1995 to 2003-04. the hypothesis that has been tested was that the debt –equity ratio depends upon asset structure, size ROA and debt ratio. Multivariate regression analysis was used to find out the significant factors for determinants of capital structure. He conclude that the firms that maintains large proportion of fixed assets tends to maintain a higher debt ratio then smaller firms. Further more large firms employ more debt capital with comparison to smaller firms and firms with high profitability ratio tends to use less debts then firms do not generates high profit. His findings also suggest that the firms do follow a target capital structure during the examination period, these results are consistent with theoretical backgrounds.

Madan (2007) examine the role of financing decision in the overall performance of the companies. It aims to analyze the debt equity structure of hotels and try to discover the industry benchmark and scrutinize how capital structure play a role in the overall growth of a company. this paper is based on financial data collected on leading hotel chain in India. His findings was the firms that have been moderately geared are able to generate good return on equity.

Sinha and Ghosh (2008) test the modern capital structure theories view static relationship of leverage with specific characteristics and purpose of unique singes and magnitude for the coefficient of the firm's specific determinants. Apart from this static view, the dynamic tradeoff theories propose for change in both the singes and magnitude of the coefficients. The present study examines whether the nature of determinants of capital structure decision of Indian firms is dynamic or not. The study concludes that the determinants of corporate capital structure change there sine and magnitude with resects to orders of determinants, the time periods, and the capital structure components. The study revels that the firm's size, profitability, growth rate and tangibility are the most prominent determinants of a firm's capital structure. Capital structure change is dynamic in nature and the static theoretical explanation is not a persisting behaviour.

Xu (2009) made an attempt to study the impact of marketing timing on Canadian firms' capital structure and make a comparision with US firms. The results obtained by the author showed no evidence of market timing on capital structure of Canadian firms' like US firms. The effect of past issue on Canadian firms' capital structure is transitory and the speed of adjustment of Canadian firms is more than US firms.

Puwanenthiren Pratheepkanth (2011) analyzes the capital structure and its impact on Financial Performance capacity during 2005 to 2009 (05 years) financial year of Business companies in Sri Lanka. The result shows that the relationship between the capital structure and financial performance is negative in Sri Lanka. Hence Business companies mostly depend on the debt capital and therefore, they have to pay interest expenses much.

Amsaveni and Gomathi (2012) found that business risk and liquidity are negatively related to the leverage, while tangibility, growth, size, non-debt tax shields exhibit positive relationship leverage. Hence, the result is partially supportive of the pecking order and trade off theory.

Palvannan and Sekhar (2013) found that the factors such as size, growth, earning risk, Non-debt tax shields, business risk, debt service capacity and leverage are determined the capital structure of cooperative sugar mills and all these variables have significantly contributing to debt equity.

### 3. OBJECTIVE OF THE STUDY

1. To see the effect of growth on leverage ratio.
2. To look the influence of asset structure on leverage ratio.
3. To determine whether profitability has its impact on leverage ratio.
4. To look into the effect on debt service ratio on leverage ratio.
5. To determine whether agency cost has its effect on leverage ratio.
6. To examine whether size has its impact on leverage ratio.
7. To see whether business risk has its impact on leverage ratio.
8. To examine whether tangibility has its effect on leverage ratio.
9. To look the influence of bankruptcy on leverage ratio.
10. To examine whether non-debt tax has its impact on leverage ratio.

### 4. HYPOTHESIS OF THE STUDY

H0: There is no relationship between Leverage ( $LEV_{D/E}$ ) and particular dependent variable.

H1: Leverage ratio is positively related influenced by growth.

H2: Leverage ratio is positively related influenced by asset structure.

H3: Leverage ratio is negatively related influenced by profitability.

H4: Leverage ratio is positively related influenced by debt service ratio.

H5: Leverage ratio is negatively related influenced by agency cost.

H6: Leverage ratio is positively related influenced by size.

H7: Leverage ratio is negatively related influenced by business risk.

H8: Leverage ratio is positively related influenced by tangibility.

H9: Leverage ratio is positively related influenced by bankruptcy cost.

H10: Leverage ratio is negatively related influenced by non-debt-tax.

### 5. RESEARCH METHODOLOGY

Multiple regression model has been applied to study the impact of various variables on dependent variables i.e., leverage ratio.

In order to test the individual regression coefficient of the regression equation t- test is applied to observe whether the independent variables has been instrumental to define the dependent variable i.e. leverage ratio. In place of actual values of dependent and independent variables, logarithmic value has been considered.

#### A. THE MULTIPLE REGRESSION MODEL

Pooled cross- sectioned time series regression model is used to analyzed the capital structure determinants

$$LEV_{D/E} = \alpha + \beta_1.Gr + \beta_2.As + \beta_3.Pr + \beta_4.Ds + \beta_5.Ac + \beta_6.Sz + \beta_7.Ri + \beta_8.Un + \beta_9.Bk + \beta_{10}.Ts + \epsilon$$

Where,  $LEV_{D/E}$  = Leverage ratio, which is linearly dependent upon

Gr = Growth

As = Asset structure

Pr = Profitability

Ds = Debt Service

Ac = Agency Cost

Sz = Size of the company

Ri = Business Risk

Un = Uniqueness

Bk = Bankruptcy

Ts = Tax- Shield

#### B. DEPENDENT VARIABLE

Doukas and Pantzalis (2003) defined capital structure as a long debt scaled by total debt + market value of equity. So by the following formula we can determine leverage ratio.

Long term Debt

$$LEV_{D/E} = \frac{\text{Long term Debt}}{(\text{Long term Debt} + \text{market value of Equity})}$$

#### C. INDEPENDENT VARIABLES

A short discussion of each the determinant used in this paper, their relationship with capital structure, and how they can be measured will be presented below-

**1) Growth (Gr):** Under investment and asset substitution problems that debt is supported by assets-in-place rather than growth opportunity, Myers and Magleth (1984) .

Gr = Growth of the firm = CAGR of Total Assets

**2) Asset Structure (As):** The firms with less collateralizable assets (tangibility) may choose higher debt levels to stop managers from using more than the optimal level of perquisites. This agency explanation suggests a negative association between tangibility and leverage. Booth *et al.* (2001) have reported a negative relationship between tangibility and leverage for firms in Brazil, India, Pakistan, and Turkey. Some other empirical studies have also reported a negative

relationship between tangibility and leverage (Ferri and Jones, 1979; Bauer, 2004; Mazur, 2007; Karadeniz *et al.*, 2009). For the sake of measurement of tangibility / asset structure or collateral value of asset we use the ratio of fixed assets over total assets.

Asset Structure = Total Fixed Assets / Total Assets

**3) Profitability (Pr):** Profitability can be calculated as Profitability of the firm = EBIT / Total Assets, which is consistent with the earlier research, had been conducted for determining the capital structure determinates by Brealey and Myers, 1991, Myers and Majluf (1984), Jensen (1986) etc.

Profitability of the firm = EBIT / Total Assets.

**4) Debt Service capacity (Ds):** The measure of debt service capacity is the interest coverage ratio. This ratio shows the relationship between the committed payment and the source for that payment. A high coverage ratio means that firm can meet its interest burden even if a considerable decline in EBIT. Whereas low interest coverage ratio may result in financial embarrassment when EBIT decline. A higher ratio is desirable but too higher ratio indicates that the firm is very conservative in using debt, and that is not using credit to the best advantage of shareholders. A low ratio indicates excessive use of debt. Debt service capacity will be measure as:

Debt Service capacity = Total Interest Paid / EBIT

**5) Agency Cost (Ac):** Higher agency cost is expected to result in lower debt levels (Jensen, 1986; Doukas and Pantzalis, (2003). Significant agency cost arises from the conflict of interest between stock holders and bond holders. The information of agency model is that this conflict creates incentive for stock holders to take action that benefit themselves at the cost of bond holders. Myers (1977) found that the agency problem are specially serious for assets that give firm the option to undertake growth opportunity in future. The greater the firm investment in such assets the less would be that financed. The agency cost can be measured as the asset utilization ratio which is as:

Agency Cost = Annual Sale / Total assets

**6) Size of the company (Sz):** Rajan and Zingales (1995) argues that large firms tends to disclose more information to outside investors then the smaller ones overall, large firms with less asymmetric information problems should tend to have more equity then debt and thus, have lower leverage. However, large firms are often more diversified and have more stable cash flow. However, for the purpose of collecting the data Natural Log of Total Asset has been taken into consideration.

Size = Natural Log of Total Asset

**7) Business Risk (Ri):** Business risk is the risk associated with the future operations of the business. This is the risk that is inherent in the expected net operating income stream generated by the assets of the firm (Bishop, Fagg Oliver and Twite.2004).

Business Risk = Standard Deviation of EBIT

Where, EBIT = Earnings before Interest and Taxes.

**8) Uniqueness (Un):** Loof (2003) summarizes the idea due to Titman (1984)[31], that the more unique a firm's asset is, the thinner the market for such assets. Accordingly the lower is the expected value recoverable by a lender in the event of bankruptcy. Hence, we may expect that uniqueness be negatively related to leverage. Following Titman and Wessels (1988), uniqueness is measured as the ratio of expenditures on research and development over sales.

Uniqueness = Expenditure on Research and development / Total sales

**9) Bankruptcy Ratio (Br):** Higher level of debt increases the probability of bankruptcy. There is a positive relationship between leverage and bankruptcy risk. Eitemen, Stonehill and Moffettb (2001) argued that MNC's are in a better position to support higher debt because of their better internationally diversified cash flow given them lower risk of default. However, some empirical studies came to the opposite conclusion. But for the measurement purpose it can be calculated as

Bankruptcy Ratio = Standard Deviations of first difference In PBIT / Total interest Expenses

**10) Tax Shield (Ts):** According to Modigliani and Miller (1958), interest tax shields create strong incentives for firms to increase leverage. But also the size of non-debt related corporate tax shields like. Tax-deductions for depreciation and investment tax credits may affect leverage. Indeed, DeAngelo and Masulis (1980) argue that such non-debt tax shields are substitutes for the tax benefits of debt financing. Therefore, the tax advantage of leverage decreases when other tax deductions like depreciation increase. Hence, we expect that an increase in non-debt tax shields will affect leverage negatively.

Titman and Wessels (1988) use the ratio of tax credits over total assets and the ratio of depreciation over total assets as measures of non-debt tax shield. In this study, we have only data on depreciation and therefore, the ratio of depreciation over total assets will serve as a measure for non-debt tax shield

Non-debt Tax Shield = Depreciation on Fixed Assets / Total Assets

## 6. ANALYSIS

Descriptive analysis of dependent and all independent variable of home appliances industry has been given in table-1 The dependent variable  $LEV_{D/E}$  must have a good relation with independent relation and regression analysis is feasible if the variables have normal distribution. The skewness and kurtosis are normal when the statistics is near to 0 from SPSS output and within  $\pm 3$ . Skewness is a measure of normality, if the statistic is more than 0 it means the distribution lies towards right side. In terms of the above independent variables it is observed variables have near normal skewness and would be better variables for extracting  $LEV_{D/E}$  which has also shown fair normality. In terms of kurtosis if the statistics is more than 0 it means the variable is clustered near the mean (peaked: leptokurtic) and the data has less spread however if it is less than 0 it means the distribution is too much spread and scattered (too flat: platykurtic). The output reveals that all independent variables have a normal distribution. The dependent variable  $LEV_{D/E}$  has a near to normal distribution thus it is plausible to go to next step of model building through regression analysis.

The model summary (Table-2) explains that the variation in dependent variable: Debt equity ratio of home appliances industry is being explained by the independent variables fully. The linearity is prime requisite in a regression model and the correlation statistic of 0.872 ( $R=.872$ ) reveals that the variables are correlated. The variation of dependent variables is explained by Coefficient of determination and it is 76 percent ( $R\text{ square}=.760$ ) here, which in the model denotes that 76 % of the observed variability in  $LEV_{D/E}$  can be explained by differences in the independent variable remaining 24 % variance in  $LEV_{D/E}$  is attributed to other variable. Adjusted R square takes actual sample size under consideration and is also near to 74 percent. The standard error is less than one thus signifying the variation is less in the data. In order to check the interdependence between residuals of variables Durbin-Watson test is applied. The value varies between 0-4, 0 indicating positive relation and 4 indicating negative relation, 2.241 indicates nearly neutral relation between residuals. The above analysis reveals that Debt-Equity ratio ( $LEV_{D/E}$ ) can be predicted on the basis on the independent variables taken in the model for home appliances industry.

Table-3, the ANOVA table shows how well variation in dependent variable; DE ratio in this case is accounted for by the predicted model. The significance .034 being less than .05 (5%) indicates that null hypothesis of no relationship between dependent and independent variables is rejected and thus the dependent variable  $LEV_{D/E}$  has relationship with the independent ratios taken in the predicted model. The next table provides input on the type and degree of relationship between the dependent and independent variables.

However, it is possible that the selected explanatory variables may be correlated with each other, so the chosen variables may actually measure the effects of several different variables. To address this problem the study tests for the multicollinearity is conducted. The presence of multicollinearity makes the estimation and hypothesis testing about individual coefficients in regression not possible (Gujarati, 2003).

The variance Inflation Factor (VIF) is a commonly used for assessing multicollinearity problems. It shows the degree to which each independent variable is explained by other independent variable. As a rule of thumb, a VIF greater than 10 indicates the presence of harmful collinearity (Gujarati, 2003).

According to the review of established works in financial literature VIF less than 10 is acceptable and is regarded as showing less chance of multicollinearity. The sample data shows no multicollinearity as the VIF is well within 10. The reciprocal of VIF is taken to be tolerance and it has come to be less than .1 again establishing the same fact.

The final table (Table-5) of coefficients enables us to understand that at 10% level of significance the relation between the  $LEV_{D/E}$  and size, growth and uniqueness are significant and the relation between  $LEV_{D/E}$  and other ratios namely profitability, asset structure, business risk, debt service, agency cost,

bankruptcy, tax shield are only due to chance. Thus out of ten independent variables taken only three have proven to be statistically important determining the  $LEV_{D/E}$  ratio of a home appliances company.

$$LEV_{D/E} = 1.1 + .22S + .01Gr - 2.3Un$$

## 7. FINDINGS

The variable *size* has a positive and significant impact on the  $LEV_{D/E}$ . This finding is consistent with the implications of the trade-off theory suggesting that larger firms should operate at high debt levels due to their ability to diversify the risk and to take the benefit of tax shields on interest payments. There are several theoretical reasons why firm size is related to the capital structure. Smaller firms may find it relatively more costly to resolve informational asymmetries with lenders and financiers, which discourages the use of outside financing (Chung, 1993; Grinblatt and Titman, 1998) and should increase the preference of smaller firms for equity relative to debt (Rajan and Zingales, 1995). However, this problem may be mitigated with the use of short term debt (Titman and Wessels, 1988). Relative bankruptcy costs and probability of bankruptcy (larger firms are more diversified and fail less often) are an inverse function of firm size (Warner, 1977; Ang et al., 1982; Pettit and Singer, 1985; Titman and Wessels, 1988).

Positive but insignificant relationship found between *Profitability* and  $LEV_{D/E}$ , the relationship supports Trade-off theory, which states that there is a positive relationship between profitability and leverage. This finding is also consistent with the same findings by Bhat, Ramesh (1980), Mohan Sahoo and Omkarnath (2005), Bhattacharjee (2010), And Mohan Raj (2011). Positive relationship between profitability and leverage indicates that more profitable firms in textile industry in India uses higher amount of debt.

Theoretically, the expected relationship between the debt ratio and *asset structure* is positive. However, based on the results of this study, the relationship is negative. Some empirical studies for developing countries, i.e. Booth et al. (2001), Bauer (2004), Mazur (2007) and Karadeniz et al. (2009), have shown a negative relationship. However, this finding is consistent with the implications of the agency theory suggesting that the tendency of managers to consume more than the optimal level of perquisites may produce an inverse relationship between collateralizable assets and the debt levels (Titman and Wessels, 1988). The pecking order theory also predicts a negative relationship between tangibility and short-term debt ratio (Karadeniz et al., 2009).

Our result showed that *risk* has negative effect on  $LEV_{D/E}$ . The negative result supported both the trade-off theory that the more volatile cash flows the higher the probability of default and the pecking order theory that issuing equity is more costly for firms with high volatile cash flows. Pandey (2001) found that there was a negative relation of earnings volatility with book and market value long-term debt ratio, which was consistent with the trade-off theory.

The empirical result show that *agency cost* has a negative and non-significant relationship with  $LEV_{D/E}$ . Our result is well supported by reasoning that companies which manufacture durable products requiring long-term service contracts find that the consumer demand for their product diminishes when they take on greater debt, as consumers face a greater risk that the company shall not be able to service the sales. This applies to workers too as they will not prefer to work in a firm where, in the event of bankruptcy, their skills are not of any use elsewhere. Firms using highly specialised labour therefore have to avoid the possibility of bankruptcy by keeping debt at low levels. Titman (1984) accordingly stated that firms with unique assets have necessarily to carry less debt, due to agency costs. Therefore agency costs can come into play in different ways and restrict the issue of equity/ debt, depending on the situation. Capital structure is therefore influenced by these costs.

The statistically non-significant negative relation between  $LEV_{D/E}$  and *bankruptcy* ratio, is consistent with the result of Chowdhury (2004) who also obtained a negative relationship between the two. The findings about bankruptcy risk of this study confirm the prediction of agency cost theory, trade-off theory and pecking order theory. Implication of this finding is that high bankruptcy risk arising from expected future financial distress cost and legal cost de-motivates use of fixed contractual obligation, i.e. debt by home appliances companies. Hence, a negative relation is observed in this empirical study.

Applying pecking order arguments, growth firms place a greater demand on the internally generated funds of the firm. Consequentially, firms with relatively high growth will tend to issue securities less subject to information asymmetries. This should lead firms with relatively higher growth to having more leverage, which is consistent with our statistical result that shows positive and significant relationship between *growth* and  $LEV_{D/E}$ . Our results were consistent with what Sogorb-Mira and Lopez-Gracia (2003) said that there was a positive relation between growth and short-term leverage, long-term leverage, and total leverage. Sogorb-Mira and López-Gracia (2003) tested leverage predictions of the trade-off and pecking order models.

According to the result, non-debt *tax shield* has negative but non-significant correlation with  $LEV_{D/E}$ . Since we expect that an increase in non-debt tax shields will affect leverage negatively, we may argue that this result indicates that non-debt tax shields are substitutes for the tax benefits of long-term debt financing to depreciation; when firms are engaged in tax shelter schemes, the mainly consider long-term debt. On the other hand, short-term debt may be used to more or less indirectly finance investments in long-lasting assets. This finding is also consistent with the following researchers; Titman and Wessels (1988), Harris and Raviv (1991), Kakani (1999), Inder Sekhar Yadav et al (2010), and Palvannan and Sekhar (2013).

We have more or less positive and negative statistically significant result between uniqueness and  $LEV_{D/E}$ ,  $LEV_{LTD/TA}$ , which is either by chance or uniqueness really plays a significant role in home appliances industry which is contrary to the pre established theories as Loof (2003), using Swedish data and same measure for uniqueness as in this study (ratio of research and development over sales), finds that *uniqueness* is not a significant factor that may affect leverage.

## 8. CONCLUSION

This study attempted to explore the determinants of capital structure of listed home appliances companies in India during the period of 2003 through 2013. This study has used the debt ratio, that is a measure of leverage ( $LEV_{D/E}$ ), as an explained variable, while Size, profitability, asset structure, business risk, debt service, agency cost, bankruptcy growth, tax shield and uniqueness as the explanatory variables. According to the empirical analysis results size and growth opportunities have positive relationship with  $LEV_{D/E}$  whereas uniqueness has negative impact on long term debt ratio of home appliances industry in India. This result is partially supported by the Pecking order and trade-off theories in financial management literature.

In conclusion, the evidence suggests that size of the firm, growth opportunity and uniqueness of the firm in terms of expenses on research and development are the contributing factors in determining the capital structure of the home appliances industry in India.

The study has wide scope and it can be applied to any and every sector to understand the behavior of leverage when there is change in any of the financial ratios. The managers need to understand the relation between various ratios clearly before making important decisions pertaining to leverage of the firm.

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## ANNEXURE

**TABLE-1: DESCRIPTIVE STATISTICS OF HOME APPLIANCES INDUSTRY**

	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
Size	1.76951	7.00106	4.97264	1.59988	.490	-.912
Profitability	-.51116	.558271	.52061	.23839	-1.211	1.785
Assets Structure	.4459	.90911	.61381	.99216	-1.557	.802
Business Risk	.40269	3.65500	5.26058	1.8605	1.088	1.472
Debt Service	.4057	.68907	.49538	.36164	-3.472	.929
Agency Cost	.3705	.6750	.50390	.39418	.688	-.569
Bankruptcy Ratio	.2794	.45220	.3733	.4496	.329	1.762
Growth	1.6985	8.2649	4.5639	2.0531	.293	1.266
Tax Shield	.033600	.4078	.20461	.11534	1.280	1.282
Uniqueness	.03808	.1519	.050091	.03340	.196	-1.155
LEV <sub>D/E</sub>	1.29	4.03	1.9100	1.49103	1.405	.877

**TABLE-2: MODEL SUMMARY TABLE FOR MULTIPLE REGRESSION**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.872 <sup>a</sup>	.760	.741	5.14678	2.241

a. Predictors: (Constant), Uniqueness, Business Risk, Bankruptcy Ratio, Debt Service, Tax Shield, Profitability, Agency Cost, Assets Structure, Size, Growth

b. Dependent Variable: LEV<sub>D/E</sub>

**TABLE-3: ANOVA TABLE FOR REGRESSION OF LEV<sub>D/E</sub>**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	50.362	10	5.036	.190	.034 <sup>a</sup>
Residual	132.447	5	26.489		
Total	182.809	15			

**TABLE-4: EXPLANATION OF REGRESSION MODEL WITH SIGNIFICANCE VALUE**

	(Constant)	Size	Profitability	Assets Structure	Business Risk	Debt Service	Agency cost	Bankruptcy	Growth	Tax Shield	Uniqueness
LEV <sub>D/E</sub>	1.119	0.215	3.474	-2.099	-0.032	0.957	-0.671	-0.081	0.007	-0.364	-2.472
Sig. value (10%)	0.649	0.046*	0.809	0.597	0.813	0.593	0.752	0.545	0.049*	0.759	0.026*

\* significant at 10 % level of significance



## TASK DEMAND AS A FACTOR CAUSING JOB STRESS: A STUDY OF WORKING WOMEN OF IT SECTOR IN NATIONAL CAPITAL REGION OF DELHI

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### ABSTRACT

*Working women in the IT sector India is prone to job stress due to imbalance between the demands of the organizational environment and individual resources affecting her psychological well-being. Based on a research of 300 working women in IT sector of NCR region of Delhi, task demand was found to be a definite factor leading to job stress in working women. Out of the various sub factors analyzed under task demands, non availability of flexible timings, training for their career growth, organizations layoff & retrenchment policies, office politics and unrealistic expectations from the job were found to be significant factors influencing job stress.*

### KEYWORDS

Working Women, Job stress, Task demands, IT sector.

### INTRODUCTION

Job related stress can be conceptualized as an interactive imbalance between the individual and the individual's work environment (French, et al., 1974). The workplace represents a community of workers, which serves as an important source of social support for stressed employees where they could be made to feel like at home (McGuire 2007). The level of social support that workers receive at the workplace influences their levels of job stresses, and strains as well as the levels of their satisfaction with their jobs, and job performances (House 1981, Fisher 1985, Haines, Hurlbert & Zimmer 1991, Hurlbert 1991, Nelson & Quick 1991, Ducharme & Martin 2000, Park Wilson & Lee 2004, Synder, Claffey & Cistulli 2011, Brotheridge 2001). Hofboll, Geller & Dunahoo suggest that it is important to consider the stressors that are unique to employed women, as this can increase the understanding of the specific needs of working women. These include- organizational climate (Miler, Greyling, Cooper, Lu, Sparks & Spector multiple roles (Burke 2003), lack of career progress (Brass 1985); discrimination, stereotyping, (Waterhouse 1991, Schneider 1997) marriage/work interface, social isolation (Nelson & Quick). The current work environment has resulted in a growing number of workers reporting work overload, stress-related illnesses, depression, substance abuse, and other personal and family problems (Banta, 1989; Hopkins, 1993; Myers, 1985).

Task demand is related to everyday conditions in the organization that affect the general working & productivity of employees in the organization. For women these include relation with seniors & peers, acceptance by male subordinates, facility of flexible timings, training & development, layoff, office politics & unrealistic job expectations.

Over the past decade, India has emerged as one of the fastest growing IT markets in the Asia Pacific region. The National Capital Region has been one of the top regions in terms of ICT (Information communication technology). The number of Indian & multinational organizations present in this area is a testimony to this (Nasscom-McKinsey report 2005). The dynamic environment of the Information technology sector puts a lot of pressure on employees and organizations, demanding more immediate and direct changes across all functions. This sector is very volatile and faces the problem of lack of job security and constant upgradation of skills to remain marketable. The working conditions in the Information System profession is becoming very stressful (Vowler, 1995; Engler N. 1996; Sethi et.al., 1999; Thong and Yap, 2000) with average working hours extended to 50 hours per week, working on Saturdays and Sundays and not being able to take leave when sick (King, 1995). According to K. S. Rajeswari and R. N. Anantharaman (2003) fear of obsolescence and individual team interactions accounted maximum stress among software professionals. In another study by K. S. Rajeswari and R. N. Anantharaman (2005) on Role of Human-Computer Interaction Factors as Moderators of Occupational Stress and Work Exhaustion found that IT professionals have long work hours with different time zones, total team work, task to be completed on deadline with perfection as per client needs, which requires interpersonal, technical, and organizational. These characteristics lead to occupational stress and work exhaustion.

The purpose of this paper is to investigate the task demand as a factor causing stress in the working women. To begin a review of the literature is provided on the factors leading to job stress in working women and the various constructs of task demand. Following this, the results of survey of working women in the IT sector of the NCR region are presented. Pie chart and item response theory is used to analyze the results of the survey. To conclude, the practical and academic implications of the findings are discussed in the context of managing job stress in working women.

### LITERATURE REVIEW

#### WOMEN'S PARTICIPATION IN THE WORKFORCE

Women's participation in the workforce is increasing all around the world (Davidson & Burke, 2004). This trend is resulting in the transformation of traditional gender roles and raising concerns about the psychological well-being of women and men who are experiencing role overload and work-family conflict (Elloy & Smith, 2003; Pleck, 1977). Weiss 1987 proposes that females face difficulties in their relationships at work, the highest degree of stress was with working with superiors. Training is considered as a waste on women as eventually they will leave work for marriage and children (Crampton & Mishra, 1999).

The information technology field (IT), organization cultures represent a barrier for women advancing to upper management positions (Lemons and Parzinger, 2001). In addition, Bae (2002), in a study on women in the US found that women have less access to relevant training and are less likely to be trained than men. Mitchie and Nelson (2006, p 18) found that regardless of the recruitment efforts and incentives to encourage more women in the IT sector within the US, managerial work positions are still highly dominated by men. The main problem was due to institutions not addressing the retention of IT women professionals. Similar to women in other professions, women in IT face social barriers that restrict their career persistence and advancement (Ahuja, 2002). The social pressure of worklife balance was one of the commonly cited challenges of IT work. Women are expected to be chaste and especially modest in all actions (Dube and Palriwala, 1990), which may constrain their ability to perform in the workplace on an equal basis with men.

#### INDIAN CONTEXT

The Indian society is presently experiencing and accelerated change in economy, social structure, and family structure. Despite the increasing workforce participation of women, India remains largely a hierarchical male-dominated society. The cultural traditions and family role-structures have not changed significantly and women on average still bear responsibilities for daily household chores, such as cooking, shopping, providing care for children and aged family members (Aziz, 2004). Research on career women in India shows that work and family dilemmas are often different from those reported by women in the West (Sekaran 1992).

The Women of Tomorrow Study (2011), which examined 6,500 women from 21 developed and developing countries like Sweden, the US, the UK, France, the BRICS economies from February through April 2011, found that an overwhelming 87% of Indian women said they felt stressed most of the time, with 82% claiming they had no time to relax. The latest study done by Nielsen (2011) reveals Indian women are the most stressed in the world today. An overwhelming 87% of Indian women said they felt stressed most of the time, and 82% had no time to relax. The survey, covered 6,500 women. The biggest stress is felt among women of 25-55 years of age, typically married where expectations from women have risen and where conflicts between what all women must do too has surged. Indian women are not alone. The vast majority of Mexican (74%) and Russian (69%) women surveyed also reported feeling stressed. Nielsen's survey (year) found that worldwide, women play multiple roles that contribute to their stress levels, but that the social infrastructure allowing them to navigate these roles differed between emerging and developed markets. As a result, women in emerging markets tended to be more stressed than women in the developed world, with women in India, Mexico and Nigeria feeling the most time-pressured. Despite the technological prowess of India's engineers and outsourcing firms, the country's basic infrastructure isn't sophisticated enough to support telecommuting and work-from-home arrangements on a widespread basis. Ojha and Rani (2003) indicated that working women significantly perceived higher stress. Nelson and Quick (1985) exhibited greater stress caused by marital, social, familial and professional roles.

The TCS-People Matters Gender Inclusion Survey 2010-11, found that though women are relatively well represented in the services and the IT sectors, they are mostly concentrated at the entry levels. In the IT sector, 70 percent of the respondents claimed that they have between 15-30 percent of women in their total workforce, while in the finance sector 73 percent of the respondents claimed that the women share of their workforce was up to 15 percent. The World Economic Forum's 2010 Global Gender Gap Index shows that the education attainment gap has almost disappeared the Indian context the gap has reduced 16.7 percent in 2011, but this is not translating into women being retained, developed and advanced in the workforce. Despite two decades economic renaissance, India is the worst among the 6 top Asian economies (including China, Hong Kong, India, Japan, Malaysia, and Singapore) when it comes to representation of women in the workforce at junior and middle-level positions, according to the Gender Diversion Benchmark of Asia 2011 report. Worse, at 48 percent, India has the most significant drop from junior to middle level positions. These numbers mean that the pipeline is either leaking or is stuck.

#### ORGANIZATIONAL CONSEQUENCES OF STRESS

Some consequences are job dissatisfaction, enhancement of organizational accidents, absence, (Houtman al 1999) productivity deterioration and job quit (Giorgi, 2009,) apathy, resignation, fantasy, forgetfulness, inability to concentrate, procrastination, and inability to make decisions. High levels of unchecked and unmanaged occupational stress not only undermine the quality, productivity and creativity of the employees but also employees' health, well-being and morale (Calabrese et al., 1987; Matteson and Ivancevich, 1987; Frese, 1985; Cohen and Williamson, 1991), high turnover of labor (Giorgi, 2009) with the loss of "good" employees, and a large increase in recruitment and retraining costs (McHugh and Brennan, 1992; Cooper and Cartwright, 1994; Edworthy, 2000). Turnover of highly skilled employees can be very expensive and disruptive for firms (Reichheld, 1996). Losing highly skilled staff members means that companies incur substantial costs associated with recruiting and re-skilling, and hidden costs associated with difficulties completing projects and disruptions in team-based work environments (Niederman and Summer, 2003). The "job churning", specifically, with relation to information technologies have short life cycles, requiring continuous hiring of new workers with new skills, as opposed to the more time consuming approach of training current employees (Network, 2000). Certain aspects of work, however, can be toxic. The health benefits of careers can be compromised by the health risks associated with stressors at work. There are gender differences in physical, psychological, and behavioral symptoms of stress. Physical symptoms reported more often among women include headaches and poorer overall physical health. Anxiety, depression, and sleep disturbances are the psychological symptoms most often reported by women, and work stress has been implicated as a culprit in these distress symptoms (Nelson, D. L., Hitt, M. A., & Quick, J. C. 1989). Lawless (1992) reported that women suffered fifteen percent more stress related illnesses than men. They also thought about quitting their jobs more often, and reported a higher incidence of burnout. The coping strategy adopted by the working women was based on the intensity of stress experienced by them.

#### STATEMENT OF THE PROBLEM

The foregoing review of literature led to certain specific research questions. The question were: How is task demand related to stress in women, Which construct in task demands plays a significant role in increasing stress? How organizations can help to reduce such stress?

Task demands include general organization environment & support system. The study through review of literature identified eight constructs of task demand which were stress influencers that played a significant role to stress in working women especially IT sector: (1) Support from seniors, peers (2). Acceptance of male subordinates (3) non-inclusion in training programs (4) arrangement of flexi-timings (5) office politics (6) workload (7) layoff policies of the organizations and (8) unrealistic expectations from the job.

#### OBJECTIVE OF THE STUDY

The objective of the study was to investigate task demand as a factor of job stress among the working women of IT sector in the National Capital Region.

#### HYPOTHESIS

Working women have significant stress due to task demands in the organization.

#### METHODOLOGY

Data for this study was collected using a questionnaire. This was developed with the help of American Psychological Association Stress Survey, Health & Safety Executive Management Standards indicator Tool. The responses were measured on the Likert scale.

Convenience random sampling technique was used for selecting the sample. The sample was selected based on references in various organizations. A sample size of 300 was identified for the purpose of this study.

The questionnaires were mailed explaining to them the purpose and the need of their involvement. Out of 300 questionnaires sent 262 responded back, a response rate of approximately 87%. The responses were coded with numerical value 1 to 5 with strongly agree at 5 & strongly disagree at 1. The analysis of these factors & its relationship with stress was done with the help of item response theory using R software.

**DATA ANALYSIS & DISCUSSION**

Item Response Theory (IRT) was used to plot item response characteristics curve (ICC) for the latent trait variables.

IRT entails three assumptions:

1. A unidimensional trait denoted by  $\theta$ ;
2. Local independence of items;
3. The response of a person to an item can be modeled by a mathematical item response function (IRF).

The trait is further assumed to be measurable on a scale (the mere existence of a test assumes this), typically set to a standard scale with a mean of 0.0 and a standard deviation of 1.0. Unidimensionality should be interpreted as homogeneity, a quality that should be defined or empirically demonstrated in relation to a given purpose or use, but not a quantity that can be measured. 'Local independence' means

(a) The chance of one item being used is not related to any other item(s) being used

(b) The response to an item is each and every test-taker's independent decision, that is, there is no cheating or pair or group work.

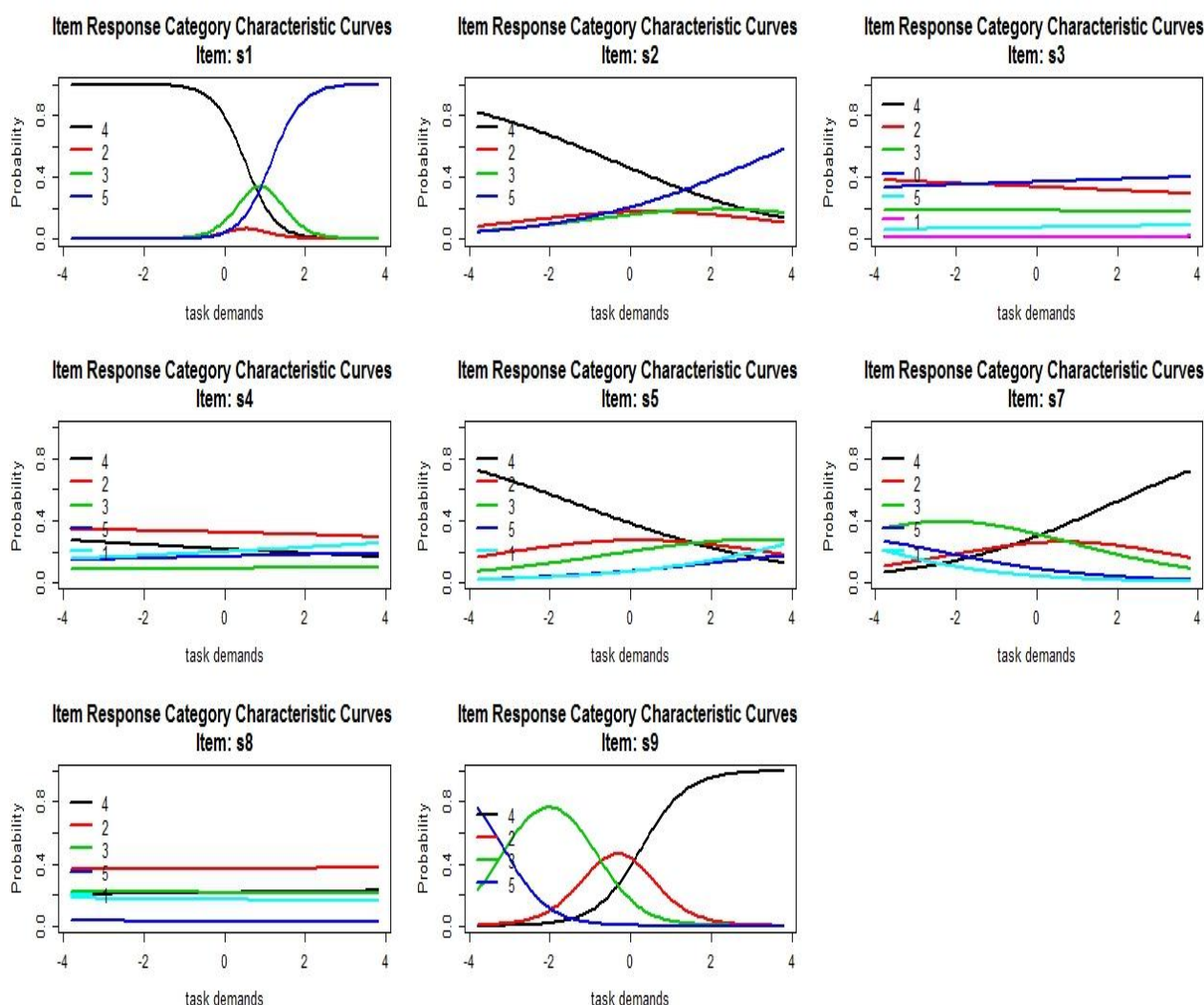
Item characteristics curve (ICC): A mathematical function that relates the probability that a respondent will answer a question correctly according to his or her underlying ability or skill.

Here ICC curve of each categorical response i.e. from "strongly agree" to "strongly disagree" based on scale rating scale is plotted against continuous latent score as task demand with mean zero and variance constant.

scaling is done as:

(Strongly agree =5; Agree=4; Neutral=3; Disagree=2; Strongly disagree=1; missing value=0)

X axis represents continuous latent score task demand with mean zero and variance constant=1 which is an assumption in "Item response theory". Y axis represents probability.

**GRAPH PANEL SHOWING "ICC" FOR 'TASK DEMANDS'****ON ANALYSIS****1) ITEM RESPONSE CATEGORY CHARACTERISTICS CURVE FOR ITEM (S1)**

**ITEM S1: I HAVE GOOD RELATIONS WITH MY PEERS & THEY ARE THERE TO HELP ME WHENEVER I NEED.**

For an average value of latent trait score for "Task demands" Probability of endorsing category "Agree" is high. Hence, the respondents agree with the fact that they have good relations with their peers & they get help from their peers whenever they need. Research studies also indicate the Co-worker support to be associated with organizational outcomes such as turnover intentions (AbuAlRub, 2010; Glass & Riley, 1998; Jonas & Butler, 1980), job satisfaction (Ducharme & Martin, 2000), increased psychological well-being (Beehr & Mc Grath 1992), decreased role conflict (Jones & Butler, 1980) and increased positive spillover from work-to-family (Colton, 2004).

**2) ITEM RESPONSE CATEGORY CHARACTERISTICS CURVE FOR ITEM (S2)**

**ITEM S2: I CAN RELY ON MY IMMEDIATE SENIORS TO HELP ME WITH A WORK PROBLEM.**

From graph it is seen that for an average value of latent trait score for "Task demands" Probability of endorsing category "Agree" is high. The respondents agree with the fact that they can rely on their immediate seniors to help them with a work problem.



**3) ITEM RESPONSE CATEGORY CHARACTERISTICS CURVE FOR ITEM (S3)****ITEM S3: I FEEL MY SUBORDINATES WHO ARE MALE ACCEPT ME AS THEIR SENIOR.**

From graph it is seen that for an average value of latent trait score for "Task demand" Probability of endorsing category "disagree" is high. The respondents agree with the fact that they don't agree that their subordinate who are male accept them as their senior. This is supported by earlier research studies that the behavior of coworkers and supervisors is a major source of workplace stress, as captured by constructs such as abusive supervision (e.g., Tepper 2000), toxic workplace (e.g., Frost 2004), and sexual harassment (e.g., Bergman et al., 2002).

**4) ITEM RESPONSE CATEGORY CHARACTERISTICS CURVE FOR ITEM (S4)****ITEM S4: THE ORGANIZATION GIVES THE FACILITY OF FLEXIBLE TIMINGS OR WORK FROM HOME.**

Probability of endorsing category "Disagree" is higher with respect all other category. Thus it is concluded that most of respondent feels that their organization does not give the facility of flexible timings or work from home.

**5) ITEM RESPONSE CATEGORY CHARACTERISTICS CURVE FOR ITEM (S5)****ITEM S4: THERE ARE REGULAR TRAINING & DEVELOPMENT ACTIVITIES IN MY ORGANIZATION TO HELP ME UPGRADE MY SKILLS FROM TIME TO TIME.**

From graph it is seen that for an average value of latent trait score for "Task demands" probability of endorsing category "Agree" is maximum followed by category "Disagree" next to it thus it is concluded that there is more or less likely to be regular training & development activities in their organization to help them upgrading their skills from time to time.

Further though there are regular training & development activities in the organization to help upgrade the skills of female employees from time to time" with increase in task demands probability of respondent agree that "There are regular training & development activities in my organization to help me upgrade my skills from time to time" decreases. Thus it is indicated that there should be regular training & development activities in organization to help workers in upgrading their skills from time to time which may lead to increase in productivity of individuals as well as organization. Therefore from the study it may be found that there are training programs for women, they decrease sharply with increase in task demands or as ability of respondents increases.

**6) ITEM RESPONSE CATEGORY CHARACTERISTICS CURVE FOR ITEM (S7)****ITEM S7: I WORRY ABOUT THE LAYOFFS & RETRENCHMENT IN THE ORGANIZATION.**

In this graph, probability of endorsing category "agree" increases with increase in latent trait score "Task demand". Thus most of respondents of the study agree with the fact that they worry about the layoffs & retrenchment in the organization.

**7) ITEM RESPONSE CATEGORY CHARACTERISTICS CURVE FOR ITEM (S8)****ITEM S8: I AM NOT SUBJECT TO OFFICE POLITICS & PERSONAL HARASSMENT IN THE FORM OF UNKIND WORDS AT WORK.**

In this graph, it is seen that probability of endorsing category "Disagree" is relatively higher than all other category for latent trait score "task demands". Thus, respondents agree with the fact that they are subjected to office politics & personal harassments in the form of unkind words at work.

**8) ITEM RESPONSE CATEGORY CHARACTERISTICS CURVE FOR ITEM (S9)****ITEM S9: THE EXPECTATIONS FROM MY JOB ARE SOMETIMES UNREALISTIC.**

In this graph it is seen that probability of endorsing category "Agree" increases with relatively high latent trait score "task demands" and have high probability of endorsing category "Agree" for relatively high latent trait score "task demand" value. Thus, respondents agree with the fact that their expectations from their job are sometimes unrealistic.

**CONCLUSIONS**

The study indicates that task demand is a significant factor causing job stress in the women information technology professionals in India. Women in organizations usually tend to have good relations with their seniors, colleagues & subordinates but these sometimes in itself can be a reason of job stress because in the process of maintaining the relationships they tend to extend and exert work pressures from office to home. Further, acceptance of a female senior by the male subordinates is somewhat low. This may lead to job stress because for getting output acceptance by subordinates is very important. The study also indicates that office politics is an important factor leading to stress. Non availability of flexible timings as per the requirements of the women makes the handling of both office and home tasks feel more burdensome. Keeping updated about the advances in technology especially in the IT sector has women professionals more worried in this sector, hence if proper training programs are not available the women perceive a sense of insecurity at their workplace. The study clearly indicates that in today's context the women professional is also worried about the Organizations' layoff & retrenchment policies as she too is a breadwinner for her family due to rising costs. The organizations expectations from the job are sometimes unrealistic as competition in the market place is increasing, thus putting extra pressure on the employees for higher level of performance. The IT organizations in India can help to reduce the job stress in its women professionals by involving this group right from the time of policy formation to its implementation as it would give the professionals a chance to address their concerns in a much more effective manner.

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## RURAL MARKETING

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## ABSTRACT

The Indian rural market has a huge demand base and offers great opportunities to marketers. Two-thirds of Indian consumers live in rural areas and almost half of the national income is generated from there. Rural marketing consists of marketing of inputs to the rural as well as marketing of outputs from the rural markets to other geographical areas. Rural markets have acquired significance, as the overall growth of the economy has resulted into substantial increase in the purchasing power of the rural communities. On account of green revolution, the rural areas are consuming a large quantity of industrial and urban manufactured products. In this context, a special marketing strategy, namely, rural marketing has emerged. Fast pace of technology advanced every sphere of social, economic, political cultural life, produce, reduce costs, distribute, and expect higher profits. This paper presents a review of rural markets' environment, Problems and strategies in India. The rural market consist 70 percent population, twice as entire market of USA and would become bigger than total consumer market in countries like South Korea, and Canada in another 20 years. Several companies are exploring cost effective channels like HUL/ ITC/ Colgate/ Godrej/ Nokia/ BPCL.

## KEYWORDS

Rural Marketing, Rural Mindset, Rural Market Potential, RM Levels.

## INTRODUCTION

Rural Marketing is defined as a function that manages all activities involved in assessing, stimulating and converting the purchasing power of rural consumers into an effective demand for specific products & services and moving these products & services to the people in rural areas to create satisfaction and a better standard of living and thereby achieving organizational goals" (year- 2010). The process should be able to straddle the attitudinal and socio-economic disparity between the urban and rural customers.

The rural markets offer a great scope for a concentrated marketing effort because of the recent increase in the rural incomes and the likelihood that such incomes will increase faster because of better production and higher prices for agricultural commodities.

Adi Godrej, chairman of the Godrej group that is in a range of businesses from real estate and personal care to agri foods, has no hesitation proclaiming, It is a myth that rural consumers are not brand and quality conscious. A survey by the National Council for Applied Economic Research (NCAER), India's premier economic research entity, recently confirmed that rise in rural incomes is keeping pace with urban incomes. From 55 to 58 per cent of the average urban income in 1994-95, the average rural income has gone up to 63 to 64 per cent by 2001-02 and touched almost 66 per cent in 2004-05. The rural middle class is growing at 12 per cent against the 13 per cent growth of its urban counter- part. Even better, the upper income class those with household incomes of over Rs one million [\$22,700] per annum is projected to go up to 21 million by 2009-10 from four million in 2001-02. It will have a 22 to 23 per cent rural component. Higher rural incomes have meant larger markets. From the point of view of rural marketing, Ghaziabad district is an ideal district because it is very much near to the capital of the country.

- According to the National what is Rural Marketing? Commission on Agriculture: „Rural Marketing is a process which starts with a decision to produce a saleable farm commodity and it involves all the aspects of market structure or system, both functional and institutional, a base on technical and economic considerations and includes pre and post harvest operations, assembling, grading, storage, transportation and distributions". "Rural Marketing can be defined as a function that manages all activities involved in assessing, stimulating, and converting the purchasing power of rural consumers into an effective demand for specific products and services and moving these products and services to the people in rural areas to create satisfaction and a better standard of living and thereby achieving organizational goals." -Pradeep Kashyap
- Scope of Rural Marketing The Rural Marketing Matrix (Market) Urban Brand Consumables and durables (Organized) Rural Farm & Non-Farm and services (Unorganized Sector) Handicrafts, Handloom Textiles, Leather products (Semi organized) Rural Urban (Production)

India as a nation has come a long way from the place where only urban population which constitutes 20 per cent of customer base for companies are responsible for 80 per cent of their profits. The companies are looking for new opportunities and avenues, as they are witnessing a decline in their growth rates in urban markets due to market saturation and they do have a huge, untouched and untapped rural Indian market. The driving force for this is rural youth who are educated, have access to technology and have openness to change. Also rural markets have acquired significance, as the overall growth of economy has resulted into substantial increase in the purchasing power of the rural communities. A survey by India's premier economic research entity, National Council for Applied Economic Research (NCAER) indicates that rise in rural incomes is keeping pace with the rise in urban incomes. The rural middle class is growing at 12 per cent, close to the urban middle class which is growing at 13 per Cent. Punjab, Kerala, Haryana, Rajasthan, Gujarat, Andhra Pradesh and Maharashtra are considered highly

## OBJECTIVES

1. To understand the rural market.
2. To unleash the potential of rural market
3. To analyze the various opportunities in rural market.
4. To analyze different marketing strategies for rural markets.
5. To understand Issues & Challenges in Rural Marketing

## RESEARCH METHODOLOGY

The study is based on secondary sources of data. The main source of data are various Economic Surveys of India and Ministry of Commerce and Industry data, RBI bulletin, online data base of Indian Economy, journals, articles, news papers, etc.

## WHAT IS RURAL?

B.N. Garudachar, general manager, corporate communication and investor relations at Voltas, a Tata group company in air-conditioning and engineering services. "These are: low population numbers, low median income, poor infrastructure [roads, electricity, communications], and agrarian rather than industrial activity. Such rural areas are within the sphere of influence of neighboring cities and metros

## SALIENT FEATURES OF RURAL INDIA

Some common characteristics that do exist amongst most of the rural markets in India are as follows

**A. Population:** 83.3 per cent of the villages have a population of less than 2000 (Census of India 2001)

**B. Levels of Education:** Although the percentage of literates has increased from 36 in 1981 to 59 in 2001, there is still approximately 60 per cent of the rural population who lies below the middle education bracket. (Kashyap & Raut, 2010)

**C. Occupational Pattern:** Almost 76 per cent of the rural population depends on cultivation or wages for their living (NCAER, 2002).

**D. Characteristics:** in terms of occupation, consumption and buying behavior change prominently from urban to rural in locations with population more than 10000.

#### INDIA'S TOP RURAL MARKETERS (JUNE 7, 2009)

- 1**



The leading biscuit maker in the country today, Britannia is banking on last mile reach, product innovation and local level re-tail activation to increase its rural sales.
- 2**



The rural portfolio, getting bigger over time, now contributes roughly 60 percent of its sales. It has created brands like CD 100 SS, CD Dawn and CD Deluxe to meet rural needs.
- 3**



HUL can teach any marketer a lesson or two when it comes to how to do rural sales. Its 'Project Shakti' has been a huge success and contributes over 15percent of its rural sales
- 4**



Its e-Choupal initiative has been a huge success creating a mutual benefit cycle for both the rural populace as well as ITC which out-sources its raw material needs through it.
- 5**



Nokia knows where the tide will turn and that's what makes them the biggest MNC in India today surpassing HUL. It's focusing big time on villages, the next telecom frontier

TABLE 1: RURAL POPULATION STATISTICS POPULATION

Population	Number of Villages	Percentage of total villages
Less than 200	114267	17.9
200-499	155123	24.3
500-999	159400	25
1000-1999	125758	19.7
2000-4999	69135	10.8
5000-9999	11618	1.8
10000 & above	3064	0.5
<b>Total</b>	<b>638365</b>	<b>100</b>

Source: Census 2001

**UNDERSTANDING THE POTENTIAL OF RURAL MARKET**

- 1. LARGE POPULATION:** 742 million Indians constituting 138 million households reside in 6,38,365 villages (Census, 2001). The size of rural market itself speaks of its potential
- 2. GROWTH IN MARKET:** The market has been growing at 3-4% per annum adding more than one million new consumers every year. Consumer is brand loyal and understands symbols better.
- 3. IT PENETRATION IN RURAL INDIA:** Today's rural children and youth will grow up in an environment where they have 'information access' to education opportunities, exam results, career counseling, job opportunities, government schemes and services, health and legal advice and services, worldwide news and information, land records, mandi prices, weather forecasts, bank loans, livelihood options. If television could change the language of brand communication in rural India, affordable Web connectivity through various types of communication hubs will surely impact the currency of information exchange. As the electronic ethos and IT culture moves into rural India, the possibilities of change are becoming visible.
- 4. IMPACT OF GLOBALIZATION:** The impact of globalization will be felt in rural India as much as in urban. But it will be slow. It will have its impact on target groups like farmers, youth and women. Farmers, today 'keep in touch' with the latest information and maximize both ends. Animal feed producers no longer look at Andhra Pradesh or Karnataka. They keep their cell phones constantly connected to global markets. Surely, price movements and products' availability in the international market place seem to drive their local business strategies. On youth its impact is on knowledge and information and while on women it still depends on the socio-economic aspect. The marketers who understand the rural consumer and fine tune their strategy are sure to reap benefits in the coming years. In fact, the leadership in any product or service is linked to leadership in the rural India except for few lifestyle-based products, which depend on urban India mainly.
- 5. INCREASING INCOME AND PURCHASING POWER:** The agricultural development programs of the government have helped to increase income in the agricultural sector. These in turn have created greater purchasing power in rural markets.
- 6. ACCESSIBILITY OF MARKETS:** The attraction of a market depends not only on its potential but also on its accessibility. The road network has facilitated a systemized product distribution system to villages. An increasing number of companies are supplying village markets directly. Increasing direct contacts to villages helps product promotion and availability of the product in the village shop.
- 7. CONSUMER BEHAVIOUR CHANGES:** Increased literacy and greater awareness in rural markets create new demands and discriminating buyers. This is observed more in the younger generation. In villages today, this segment of buyers consumes a large variety of products, both durables and non-durables. There is a visible increase in the consumption and use of a variety of products, which is easily observed.
- 8. COMPETITION IN URBAN MARKETS:** Intensified competition in urban markets increases costs and reduces market share. The rural markets are therefore increasingly attractive in relation to urban markets. The automobile market brings this out clearly. Rajdoot motorcycles, Bajaj scooters or Ambassador Cars find ready acceptance in rural markets as compared to urban markets where there is a proliferation of brands.
- 9. NEW EMPLOYMENT OPPORTUNITIES:** Government schemes like IRDP (Integrated Rural Development Programme), JRY (Jawahar Rozgar Yojana) and TRYSEM (Training Rural Youth for Self Employment) have created new employment opportunities in Rural India. Co-operative banks and Public sector banks are extending loans to rural people, thereby creating job opportunities for them. As a result very few rural people are now flocking to urban centres.
- 10. GREEN REVOLUTION:** The vision of Dr. Swami Nathan, the father of the green revolution to achieve self-sufficiency in food grain production in 1995, gave a major breakthrough in food grain production by the use of scientific methods in agriculture. At present, Rural India generates 299 million tons annually.
- 11. VARIOUS GOVERNMENT POLICIES:** The government's stress on self-sufficiency resulted in various schemes like Operation Flood (White Revolution), Blue Revolution, Yellow Revolution, etc. resulted in the production of 15 million tons of milk per annum.
- 12. BETTER CREDIT FACILITIES THROUGH BANKS:** With co-operative banks taking the lead in the rural areas, every village has access to short, medium, long-term loans from these banks. The credit facilities extended by public sector banks through Kisan Credit Cards help the farmers to buy seeds, fertilizers and every consumer goods on installments.
- 13. GREEN CARD / CREDIT CARD FOR FARMERS:** The government initiated credit cards for farmers through public sector banks. Canara bank and Andhra bank were the pioneers in the launch of the Kisan Credit Card. The farmer had a choice to take short or medium term loans through these credit cards to buy seeds, fertilizers, etc. This enabled him to produce more and thereby increase his income.
- 14. IMPROVED EXPORTS DUE TO EXPORT POLICY:** The new Export Policy 2000 paves the way for open market (OGL- Open General License System) status for agriculture. The World Trade Organization's (WTO) Policy for agro-exports has increased exports of Indian agricultural produce thereby increasing incomes of the rural population.
- 15. REMITTANCES FROM INDIANS WORKING ABROAD:** These remittances are a sizeable contribution to growing rural income & purchasing power.
- 16. POLITICAL & SOCIAL CHANGES THROUGH FAVOURABLE GOVERNMENT POLICIES:** The Indian Government launched a number of schemes like IRDP (Integrated Rural Development Programme) and REP (Rural Electrification Programme) in the 1970's, which gave a boost to the agrarian economy. This resulted in changes in people's habits and social life. REP gave impetus to the development of consumer durable industry. Mass Media has created increased demand for goods and services in rural areas. Smart marketers are employing the right mix of conventional and non-conventional media to create increased demand for products. The role cable television has been noteworthy in bringing about the change in rural people's mindset and influencing their lifestyles.

**SOME MYTHS**

- Myth 1:** Rural Market is a Homogeneous Mass Reality: It's a heterogeneous population. Various Tiers are present depending on the incomes like Big Landlords, Traders, Small Farmers, Marginal Farmers, Labourers, and Artisans. State wise variations in rural demographics are present viz. literacy (Kerala 90%, Bihar 44%) and population below poverty line (Orissa 48%, Punjab 6%).
- Myth 2:** Disposable Income is Low Reality: Number of middle class HHs (annual income Rs. 45,000 - 2,15,000) for rural sector is 27.4 million as compared to the figure of 29.5 million for urban sector. Rural incomes CAGR was 10.95% compared to 10.74% in urban between 1970-71 and 1993-94.
- Myth 3:** Individuals Decide about Purchases Reality: Decision making process is collective. Purchase process - influencer, decider, and buyer, one who pays - can all be different. So marketers must address brand message at several levels. Rural youth brings brand knowledge to Households (HH).

**OPPORTUNITIES**

Infrastructure is improving rapidly - In 50 years only, ~ 40% villages have been connected by road, in next 10 years another 30% would be connected. More than 90% villages are electrified, though only 44% rural homes have electric connections. Rural telephone density has gone up by 300% in the Social indicators have—last 10 years; every 1000+ pop is connected by STD. improved a lot between 1981 and 2001 - Number of "pucca" houses doubled from 22% to 41% and "kuccha" houses halved (41% to 23%). 2 Percentage of BPL families Low—declined from 46% to 27%. P Rural literacy level improved from 36% to 59%. penetration rates in rural areas, so there are many marketing opportunities - Durables Urban Rural Total (% of Rural HH) CTV 30.4 4.8 12.1 Refrigerator 33.5 3.5 12.0 FMCs Urban Rural Total (% of Rural HH) Shampoo 66.3 35.2 44.2 Marketers can make effective use of the large—Toothpaste 82.2 44.9 55.6 available infrastructure - Post Offices 1,38,000 Haats (periodic markets) 42,000 Melas (exhibitions) 25,000 Mandis (agri markets) 7,000 Public Distribution Shops Proliferation of large format Rural Retail—3,80,000 Bank Branches 32,000 Stores, which have been successful also - DSCL Haryali Stores D M & M Shubh Labh Stores M TATA / Rallis Kisan Kendras T Escorts Rural Stores E Warnabazaar, Maharashtra (Annual Sale Rs. 40 crore) .

**RURAL MARKETING STRATEGIES**

Corporate realized that there was saturation, stiff competition and clutter in the urban market, and a demand was building up in rural areas. Seeing the vast potential of 75 per cent Indians living in rural areas, they started focusing on these unexplored, high-potential areas. Companies came up with special rural



products, like Chic Shampoo sachets @ Re 1, Parle G Tikki Packs @ Rs 2, customized TVs by LG, Shanti Amla oil by Marico. All these brought positive results for them. Also, campaigns like Project Bharat by Hind Lever, where trials were generated across India in 1999, saw 30 per cent of its total personal products growing to contribute 50 per cent five years down the line. In the first phase, they covered 11.5 million rural households and increased awareness by 41 per cent.

### Here are some of the strategies may adopt by Companies for Rural Markets for their products and Services:

- **Best Promotion and Quality Perception:** Companies with new technology are properly capable to communicating its products and services to their customer. There is a trade-off between Quality a customer perceives and a company wants to communicate. Thus, this positioning of technology is very crucial. The perception of the Indian about the desired product is changing. Now they know the difference between the products and the utilities derived out of it. As a rural Indian customer always wanted value for money with the changed perception, one can notice difference in current market scenario especially in case of services given by the companies.
- **Easy-Way Communication especially for Rural Market:** The companies have realized the importance of proper communication in local language for promoting their products especially in rural market. They have started selling the concept of quality with proper communication and easily understandable way of communications. Their main focus is to change the Indian customer outlook about quality.
- **Changing Pattern of Rural Customers:** Nowadays villagers are constantly looking forward for new branded products and good services. Indian customer in rural market was never price sensitive, but they want value for money. They are ready to pay premium for the product if the product is offering some extra utility for the premium. Regards for Cultural and Social Values Companies have recognized that social and cultural values have a very strong hold on the people in rural markets. Cultural values play major role in deciding what to buy. Furthermore rural people are emotional and sensitive. Thus, to promote products and services we should regard their social and cultural values.
- **Focus on Customer Requirement:** Every customers want value for their money. They do not see any value additional associated with the products. They aim for the basic functionality. However, if the sellers provide frills free of cost they are happy with that. They are happy with such a high technology that can fulfill their need. For example Nokia and Reliance has launched a simple product, which has captured the market. Promoting Products and Services with Right Person in Case of Celebrity Endorsement Companies are picking up Indian models, actors for advertisements as this helps them to show themselves as an Indian company. Diana Hyden and Shahrukh Khan are chosen as a brand ambassador for MNC quartz clock maker "OMEGA" even though when they have models like Cindy Crawford. Another example Penelope Cruz endorses for Pantene Shampoo but it's more effective with Indian Models and Actors because peoples know them very well.
- **Patriotism with Products and Services :** Companies are associating themselves with India by talking about India, by overtly saying that they are Indian and they are more patriotic. Using Indian Tricolor while doing advertisement during Independence Day and Republic Day like Nokia has designed a new cellular phone 5110, with the India tricolor and a ringing tone of "Sare Jahan se achcha".
- **Promoting Indian Sports Team:** Companies are promoting Indian sports teams so that they can associate themselves with India. With this, they can influence Indian mindset like during Cricket World Cup. For example Hero Honda has launched a campaign "Dhak Dhak Go" Similarly, Other companies has also launched a campaign during world cup. Product/Services Campaign like "Be Indian" Companies are now talking about Be Indian. It is a normal tendency of an Indian to try to associate him/her with the product. If he/she can visualize himself/herself with the product, he /she become loyal to it.
- **Developing Specific Products for Specific Segment:** Many companies are developing rural-specific products. Keeping into consideration the requirements, a firm develops these products. Electrolux is working on a made-for India fridge designed to serve basic purposes: chill drinking water, keep cooked food fresh, and to withstand long power cuts. In Service Sector like Insurance they are focusing on Micro insurance products for rural segments.
- **Effective Media Modes of communication:** Traditional media or the modern media used for rural marketing is being used by companies. The traditional media include melas, puppetry, folk theatre etc. while the modern media includes TV, radio, e-chaupal. LIC uses puppets to educate rural masses about its insurance policies. Govt of India uses puppetry in its campaigns to press ahead social issues. ITC's e-chaupal (chaupal is the common place where villagers gather) has been the most elaborate and extensive venture in this field so far. Conceived by ITC's international business division and launched in 2000, the e-chaupal project has since grown to around 2,700 chapels' covering a population of around 1.2 million in five states - Madhya Pradesh, Karnataka, Andhra Pradesh, Uttar Pradesh and Maharashtra.
- **Adopting Best localized way of Distributing Channels:** Proper distribution channels are recognized by companies. The distribution channel could be big scale Super markets; they thought that a similar system can be grown in India. However, they were wrong; soon they realized that to succeed in India they have to reach the nook and the corner of the country. They have to reach the "Local Paanwala, Local Baniya or Kirana Shop Owners" only they can succeed. Big Multinational companies in India capture the rural market share in India if they have to go the local market shoe sellers and with the low priced products.

### WHY DIFFERENT STRATEGIES?

Rural markets, as part of any economy, have untapped potential. There are several difficulties confronting the effort to fully explore rural markets. The concept of rural markets in India is still in evolving shape, and the sector poses a variety of challenges. Distribution costs and non-availability of retail outlets are major problems faced by the marketers. The success of a brand in the Indian rural market is as unpredictable as rain. Many brands, which should have been successful, have failed miserably. This is because most firms try to extend marketing plans that they use in urban areas to the rural markets. The unique consumption patterns, tastes, and needs of the rural consumers should be analyzed at the product planning stage so that they match the needs of the rural people. Therefore, marketers need to understand the social dynamics and attitude variations within each village though nationally it follows a consistent pattern.

### ISSUES & CHALLENGES IN RURAL MARKETING

India is ingenious with a good degree of ethnic, cultural and regional diversity. About 3/4th of the total population resides in the rural areas and majority of them are dependent upon agriculture for their subsistence. Agriculture contributes about 24.7% to the Gross Domestic Product (GDP) of the country. It also contributes about 13.1% to the total Indian exports. This sector provides employment to 58.4% of the country's workforce and livelihood to more than 650 million people. Despite this fact, the condition of these people has not shown any significant improvement. The development of the nation largely depends upon the development of the rural population.

Rural market witnesses a high demand & it's the rural segment of market that contributes more profit than its urban counterpart. Rural marketing broadly involves reaching customers, understanding their wants, supply of goods and services, and ultimately satisfying consumers, leading to more sales. The general impression is that only agricultural inputs like seeds, fertilizers, pesticides, cattle feed and agricultural machinery has a potential for growth in the rural market. However, there is a growing market for consumer goods now. It has been estimated the rural market is growing at the rate of five times its urban counterpart.

### CHALLENGES IN RURAL MARKETING

Despite the fact that rural markets are a huge attraction to marketers, it is not easy to enter the market and take a sizeable share of the market, in the short time due to the following reasons.

- **Low Literacy:** There are not enough opportunities for education in rural areas. The literacy level is as low (36%) when compared to all-India average of 52%.
- **Seasonal Demand:** Demand for goods in rural markets depends upon agricultural situation, as agriculture is the main source of income. Agriculture to a large extent depends upon monsoon and, therefore, the demand or buying capacity is not stable or regular.



- **Transportation:** Many rural areas are not connected by rail transport. Kacha roads become unserviceable during the monsoon and interior villages get isolated.
- **Distribution:** An effective distribution system requires village-level shopkeeper, Mandal/ Taluka- level wholesaler or preferred dealer, distributor or stockiest at district level and company-owned depot or consignment distribution at state level. The presence of too many tiers in the distribution system increases the cost of distribution.
- **Communication Problems:** Facilities such as telephone, fax and telegram are rather poor in rural areas.
- **Traditional Life:** Life in rural areas is still governed by customs and traditions and people do not easily adapt new practices. For example, even rich and educated class of farmers does not wear jeans or branded shoes.
- **Buying Decisions:** Rural consumers are cautious in buying and decisions are slow and delayed. They like to give a trial and only after being personally satisfied, do they buy the product.
- **Media for Promotions:** Television has made a great impact and large audience has been exposed to this medium. Radio reaches large population in rural areas at a relatively low cost. However, reach of formal media is low in rural households; therefore, the market has to undertake specific sales promotion activities in rural areas like participating in meals or fairs.
- **Future Trends:** Markets which are not able to face the stiff competition posed by MNCs can restore their profits in the rural sector. The market share of urban market when compared to the rural market is low; hence if Indian industries concentrate on rural markets their sales will increase. If rural markets are brought into the limelight of development, they marked towards the prosperity. Prosperity of India lies in the prosperity of every Indian; hence no rural segment should be left untapped. Rural market has a tremendous potential that is yet to be tapped. A small increase in rural income, results in an exponential increase in buying power.

## CONCLUSION

Looking at the challenges and the opportunities, which rural markets offer to the marketers, it can be said that the future is very promising for those who can understand the dynamics of rural markets.

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# A STUDY ON THE WORKING FUND RATIO OF THE DISTRICT CENTRAL COOPERATIVE BANKS IN TIRUNELVELI REGION, TAMILNADU

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## ABSTRACT

*The banking sector's in India is facing challenging times. With the advent of globalization an, privatization, liberalization in India, the banks are now facing on cost reduction, innovative products and technology. DCCBs occupy a place of significance in the cooperative credit delivery system. They act as a spokesperson of the cooperative movement at district level. Inefficient functioning of cooperatives is due to bad debts, excessive overdue or otherwise investment. Therefore, the financial management occupies an importance place as the functions of these institutions. Hence, the analytical study on the Working Fund Ratio of District Central Cooperative Banks in Tirunelveli Region has been undertaken. The results of the study will help in identifying the lacuna if any in the financial performance of the DCCBs and to frame financial policies and programme to the benefit of the banks and the community.*

## KEYWORDS

Working fund ratio, co-operative banks.

## 1.1 INTRODUCTION

Financial Statements' refer to a package of statements such as balance sheets, income statement, funds flow statement, cash flow statement and statement of retained earnings. The balance sheet and income statement are traditional financial statements. Other statements are prepared to supplement them. The following are the main objectives of finance statement analysis.

- To estimate the earning capacity of the concern
- To judge the financial (both liquidity and solvency) position and financial performance of the concern.
- To determine the debt capacity of the concern.
- To decide about the future prospects of the concern.

According to the American Institute of Certified Public Accounts (AICPA), "financial statements reflect a combination of recorded facts, accounting principles and personal judgments." The term recorded facts refers to the data taken out from accounting records. Facts which have not been recorded in the financial books are not depicted in financial, however important they might be. For example, fixed assets are shown at cost irrespective of their market or replacement price since only cost price is recorded in the books. Certain accounting principles, concepts and conventions are followed in the preparation of financial statements. For example, the convention of valuating stock at cost or market price, whichever is less is followed. The principle of valuating assets at cost less depreciation is followed for balance sheet purpose. Personal judgment has an important bearing on the financial statements. For example, the selection of a method for stock valuation depends on the personal judgment of the accountant.

## 1.2 STATEMENT OF THE PROBLEM

DCCBs occupy a place of significance in the cooperative credit delivery system. They act as a spokesperson of the cooperative movement at district level. The success or otherwise of the cooperatives in a district level largely depends upon the efficiency of the functioning of DCCBs. The founders of the movement envisioned the role of DCCBs beyond the boundaries of mere financing bank. DCCBs are expected to serve as a financing bank for the primaries in a district, guide them in their day to day operations, supply of necessary manpower and technology wherever it is required, voicing on behalf of primaries at policy level etc.,. Because of this integrated role, DCCBs are strategically located and integrated with the cooperative system.

Hence, they are not only acting as financing banks but also act as development banks for the cooperatives at district level. To do these multifarious functions DCCBs should have a well-defined management system. In the total management of the DCCBs, financial management occupies a place of importance as the functions of these institutions are also governed by the Banking Regulation Act. Even a minor deviation from banking norms would attract penal actions from the law enforcing authorities. On the one side, DCCBs are expected to act as a financing bank for the primaries, which are in majority of the cases managed by untrained work force. On the other side, DCCBs are expected to follow the banking norms as well as implement the State Governments schemes and programmes for the development of the state. Most DCCBs that fail seem to do so because of problems in their loan portfolio. Non-performing loans grow to such extent that revenues fall off and loan expenses as well as operating costs absorb all the earnings that remain. The bad loan situations usually arise from combination of factors. In this regard, it is pertinent to study how these banks mobilize the resources and deploy them. Hence funds management of the DCCBs is an important issue and their financial performance is to be studied with their impact on working capital ratio in DCCBs. In this context, the questions apt to arise are:

- Whether the financial performances of the banks are in satisfactory manner in terms of working fund ratio?
- To find out the answer to these questions, an analytical study had to be undertaken. The results of such studies will help to find out the problem, difficulties, impacts etc., and to frame financial policies by the DCCBs for the benefits of the farmers, the community and other stakeholders.

## 1.3 REVIEW OF LITERATURE

Several individual researchers had studied a few facets of working fund ratio of selected DCCBs in selected areas. To know how far the ground is already prepared and to identify the gaps therein and to spell out the issues which need further intensive and comprehensive analysis, an attempt is made to review the related literature.

**1.3.1 Gowthaman A. and Srinivasan T,** (2010) in their article entitled, "Effective Funds Management by the Kumbakonam Central Cooperative Bank" has presented the DCCBs are modal centers of financial institution in the cooperative sector in a district. They have to mobilize the available resources and utilize them in the most efficient and profitable manner. As a consequence of this situation, efficiency in funds management has down considerably and profitability of

the DCCBs in Tamilnadu is found decreased. In this paper an attempt is made to analyze the funds management of the bank for the period of 1998-99 to 2007-08.

**1.3.2 Surya Rao K,** (2007) in his study, "Performance of Cooperative Banking. A study of DCCB - Eluru, Andhra Pradesh", applied ratio such as profitability analysis, productivity analysis, solvency position, and operational efficiency and SWOT analysis. The study revealed through productivity analysis that the rate of deposits per employee has lagged behind that of the loans per employee ratio. Thus there is need on the part of employees to mobilize deposit to meet loans demand in view of disparity in the growth rate in these two ratios. Accordingly the ratio values of deposits per employee, productivity of employees can be improved. The solvency ratios showed that the bank was maintaining an average cash reserve ratio of 11 per cent that is much more than the stipulated ratio of 6 per cent. The operational efficiency ratios concluded the satisfactory performance. Finally SWOT analysis revealed various aspects of the Eluru DCCBs. The study suggested strengthening of the working capital and to increase the deposit from member societies. The bank should utilize the opportunity of expanding their lending operations. Depending on external sources of borrowing such as refinance from apex bodies could be minimized by promoting deposits mobilization.

**1.3.3 Fulbag Singh and Balwinder Singh,** (2006) in their study "Profitability of the Central Cooperative Banks in Punjab- A decomposition Analysis", they analyzed the profitability position of the Central Cooperative Bank in Punjab. Two different years have been studied with the help of a frame work of Return on Equity (ROE) model. The sample of bank with high business volume and those with low business volume had been tested separately. The study could be concluded that as far as the profitability performance was concerned, the central Cooperative Bank of Punjab had worked well. The miscellaneous income in comparison to the total income has been in lower profile in these banks. The switching over to high yield non-farm sector advances has helped to register a positive trend in financial margin in almost all the banks. The implementation of prudential norms from 1996-97 have helped the banks to generate an awareness on adverse effect of overdue/ non-performing assets in these banks.

**1.3.4 Raja. S,** (2005) in his study, "Performance Evolution of MDCCB Ltd- an Application of Structural and Growth Analysis", analyzed the pattern of each component of the financial statements such as balance sheet and profit and loss account over a period of time. The study found out that performance of the Madurai District Central Cooperative Bank (MDCCB) using structural and growth analysis. Macro mean has been used to exhibit the strength and weakness of each factor considered. The major result of the study is macro mean which in respect of interest received constitutes 99% of the total income, 97% for interest paid, 21% in the case of operating expenses, 94% for spread and it is at 93% for burden. As regards book profit, it works out to be 7% the revolution of the growth rate analysis are that net loss has recorded the growth at 17%, operating expenses at 18%, spread at 13%, burden 20% advances and aggregate deposits at 6% each and fixed deposits and saving deposits at 9% each. The study concluded that the burden rate should be reduced by effecting cost control measure and spread rate be increased so that profitability can be at higher rate.

## 1.4 OBJECTIVES OF THE STUDY

The specific objectives of the present study are:

1. To analyze the working fund ratio in the DCCBs, and
2. To offer suitable suggestions for the development of the DCCBs

## 1.5 METHODOLOGY

Mainly-analytical method has been followed for studying the working fund ratio of Tirunelveli (TIDCCB), Virudhunagar (VIDCCB), Thuthukudi (TUDCCB) and Kanyakumari (KADCCB) District Central Cooperative Banks in Tirunelveli Region, Tamil Nadu. The secondary data were collected from the profit and loss account and balance sheet for the selected DCCBs. The macro level data were collected from the office of the Joint Registrar of Cooperative Audit in Tirunelveli region, Tamilnadu State Apex Cooperative Bank, Tamilnadu State Cooperative Unions, National Federation of State Cooperative Banks, NABARD and RBI.

## 1.6 SAMPLING

The present study has adopted the purposive sampling method for the selection of sample banks. Among the five cooperative regions (Chennai, Coimbatore, Trichy, Madurai and Tirunelveli) categorized by the Registrar of Cooperative Societies, Tirunelveli region was purposively selected. The considerations kept in mind were that the Tirunelveli region of Tamilnadu is popular for Agriculture, Fisheries, Dairy and Industrial growth. This region also covers plain and coastal areas with different cropping patterns. Four districts of this region were served by the four District Central Cooperative Banks namely Tirunelveli, Virudhunagar, Thoothukudi and Kanyakumari DCCBs. These four banks were selected for the present study.

## 1.7 SCOPE OF THE STUDY

A strong network of the District Central Cooperative Banks is a prerequisite for the sound performance of the three tier cooperative credit structure. DCCBs not only provided much needed financial assistance to PACBs but also ensured the smooth flow of credit to various sectors in the district. The success of these banks depends on efficient management of funds. The study has mainly focused attention to study the working fund ratio of the four DCCBs in Tirunelveli Region. The results of this study will help in identifying the lacuna if any in the working fund ratio of the DCCBs and to frame financial policies and programme to the benefit of the banks and the community.

## 1.8 PERIOD COVERED BY THE STUDY

The period of the study has been taken-up from the financial year 1998-99 to 2008-09 (11 years) as complete and comprehensive secondary data both for macro and micro level were available only for these years. The period of eleven years was considered for analysis.

## 1.9 TOOLS USED FOR DATA COLLECTION

For collecting the required secondary data from the selected DCCBs, a comprehensive schedule was prepared and used. The schedule was pre-tested and finalized.

## 1.10 FRAME WORK OF ANALYSIS

The data collected were subduced into a digestible account by appropriate coding, computing and tabulations. The basic tools of statistical analysis like average and working fund ratio were employed.

## 1.11 RESULTS AND DISCUSSION

### 1.11.1 RATIO ANALYSIS

The relationship between two figures expressed mathematically is called a 'Ratio'. It is a numerical relationship between two numbers which are related in some manner. Ratio analysis is technique of analysis and interpretation of financial statements. It is the process of determination and interpretation of various ratios for helping in decision making. Ratio analysis involves three steps.

### 1.11.2 WORKING FUND RATIO

'Working fund' concept is used by NABARD for the purpose of financial analysis. It is arrived at by deducting the accumulated losses from the total assets. The working funds of the banks are worked out and presented in the following table.

TABLE-1.1: WORKING FUNDS OF THE BANKS (Rs. in lakhs)

Years	TIDCCB		VIDCCB		TUDCCB		KADCCB		TOTAL	
	Amount	Trend	Amount	Trend	Amount	Trend	Amount	Trend	Amount	Trend
1998-99	26832	28915	22493	23636	15331	15050	16400	16219	81055	1003819
1999-00	31307	28364	25789	24890	17807	15898	19038	18461	93941	1007613
2000-01	29484	27813	27910	26145	16788	16745	19606	20704	93788	1011406
2001-02	30337	27262	28185	27399	17496	17592	21725	22947	97742	1015200
2002-03	24319	26711	30197	28654	18889	18440	24437	25190	97842	1018994
2003-04	23948	26160	28626	29908	17244	19287	29458	27433	99275	1022788
2004-05	24440	25609	29120	31162	19791	20134	31082	29676	104432	1026582
2005-06	23030	25058	29679	32417	18244	20982	33653	31919	104606	1030376
2006-07	22668	24507	32931	33671	20707	21829	31881	34162	108187	1034170
2007-08	23250	23956	33675	34926	22377	22676	34879	36405	114180	1037963
2008-09	28145	23405	40388	36180	27486	23524	39606	38648	135626	1041757
Avg.	26160	26160	29908	29908	19287	19287	27433	27433	102789	1022788
Share of individual bank to total	25.45		29.1		18.76		26.69		100	

The working fund of the selected banks had increased from Rs. 81055 lakhs in 1998-99 to Rs. 1,35,626 lakhs in 2008-09. The average working fund per bank was worked out as Rs.102798 lakhs per bank. Comparatively, the VIDCCB had highest working fund followed by KADCCB and TIDCCB and the TUDCCB has the lowest working fund. The working fund of the banks in the region may reach Rs. 159696 lakhs in 2025-26 i.e., is after fifteen year. Various ratios in relation to working fund are discussed here under.

### 1.11.3 RATIO OF FINANCIAL RETURN TO WORKING FUND

Financial return is the sum of interest earned on advances and investments i.e. return generated by the bank deploying its funds in loans and investments. This ratio assesses the percentage of interest earned on working capital.

TABLE-1.2: RATIO OF FINANCIAL RETURN TO WORKING FUNDS (Rs.in lakhs)

Years	TIDCCB		VIDCCB		TUDCCB		KADCCB		TOTAL	
	FR	R	FR	R	FR	R	FR	R	FR	R
1998-99	2275	8.5	2565	11.4	1025	6.7	1968	12.0	7833	9.7
1999-00	2238	7.1	2612	10.1	1251	7.0	1954	10.3	8055	8.6
2000-01	2341	7.9	2816	10.1	967	5.8	2091	10.7	8216	8.8
2001-02	2574	8.5	3084	10.9	1245	7.1	3255	15.0	10158	10
2002-03	2568	11.0	3194	10.6	1696	9.0	2350	9.6	9808	10
2003-04	2616	11.0	2616	9.1	1405	8.1	3057	10.4	9694	9.8
2004-05	2084	8.5	2084	7.2	1544	7.8	3015	9.7	8726	8.4
2005-06	2121	9.2	2522	8.5	1472	8.1	2811	8.4	8927	8.5
2006-07	1807	8.0	2643	8.0	1660	8.0	3070	9.6	9180	8.5
2007-08	2113	9.1	1812	5.3	873	3.9	3076	8.8	7874	6.9
2008-09	2895	10.0	4153	10.3	2080	7.6	3632	9.2	12760	9.4
Avg.	2330	9.0	2736	9.2	1384	7.2	2753	10	9203	9.0

FR= Financial Return

R=Ratio

It is evident from the above table that the financial return to working fund ratio ranges between 6.9 percent and 10 percent; on an average of about 9 percent during the study period. This ratio indicates the caring ability of the banks and concentrate to generate more income on loans and investment. All the selected banks were more or less performed equally and very nearer to the state average of 11.2. Hence it is concluded that financial return to working fund ratio of the banks in this region is satisfactory.

### 1.11.4 RATIO OF FINANCIAL COST TO WORKING FUND

Financial cost is the sum of Interest paid on Deposits and Borrowings i.e. cost incurred on the resources raised by the bank. This ratio helps to assess the percentage of interest paid on working fund. The optimum ratio is 9.

TABLE -1.3: RATIO OF FINANCIAL COST TO WORKING FUND (Rs.in lakhs)

Years	TIDCCB		VIDCCB		TUDCCB		KADCCB		TOTAL	
	FC	R(%)	FC	R	FC	R	FC	R	FC	R
1998-99	1840	6.9	2032	9.0	1159	7.6	1583	9.7	6614	8.2
1999-00	1867	6.0	2281	8.8	1607	9.0	1599	8.4	7353	7.8
2000-01	1961	6.7	2443	8.8	1480	8.8	2527	12.9	8410	9.0
2001-02	2119	7.0	2446	8.7	1500	8.6	2699	12.4	8766	9.0
2002-03	2037	8.4	2297	7.6	1421	7.5	1910	7.8	7666	7.8
2003-04	2058	8.6	2058	7.2	1250	7.3	1985	6.7	7352	7.4
2004-05	1721	7.0	1721	5.9	962	4.9	2021	6.5	6425	6.2
2005-06	1688	7.3	1726	5.8	835	4.6	2002	5.9	6250	6.0
2006-07	1439	6.4	1486	4.5	847	4.1	2092	6.6	5864	5.4
2007-08	1758	7.6	1792	5.3	1089	4.9	3718	10.7	8357	7.3
2008-09	2494	8.9	2484	6.2	1869	6.8	3324	8.4	10171	7.5
Avg.	1908	7.3	2070	7.1	1274	6.7	2315	8.7	7566	7.4

FC= Financial Cost

R=Ratio

The calculation reveals that the financial cost to working fund ratio of the selected banks had decreased from 8.2 percent in 1998-99 to 7.5 percent in 2008-09; on an average is 7.4 percent per annum during the study period (State average is 8.1). The TIDCCB, VIDCCB and TUDCCB had relatively low ratios (7.3, 7.1 and 6.7 percent). The other bank of KADCCB has a higher financial cost which is to be minimized in the forth coming years so as to earn more profits. However the figure for the whole region shows a normal position.

### 1.11.5 RATIO OF FINANCIAL MARGIN TO WORKING FUND

Financial Margin is the difference between Financial Return and Financial Cost. The ratio of financial margin to working fund is given below. The optimum level is 2.65 percent.

TABLE- 1.4: RATIO OF FINANCIAL MARGIN TO WORKING FUND (Rs.in lakhs)

Years	Banks		TIDCCB		VIDCCB		TUDCCB		KADCCB		TOTAL	
	FM	R	FM	R	FM	R	FM	R	FM	R	FM	R
1998-99	435	1.6	532	2.4	-134	-0.9	385	2.4	1219	1.5		
1999-00	371	1.2	331	1.3	-355	-2.0	355	1.9	702	0.7		
2000-01	381	1.3	374	1.3	-512	-3.1	-436	-2.2	-194	-0.2		
2001-02	454	1.5	637	2.3	-255	-1.5	556	2.6	1392	1.4		
2002-03	531	2.2	897	3.0	275	1.5	440	1.8	2143	2.2		
2003-04	557	2.3	557	1.9	155	0.9	1073	3.6	2342	2.4		
2004-05	363	1.5	363	1.3	582	2.9	994	3.2	2301	2.2		
2005-06	434	1.9	796	2.7	637	3.5	810	2.4	2676	2.6		
2006-07	367	1.6	1157	3.5	813	3.9	979	3.1	3316	3.1		
2007-08	355	1.5	20.2	0.1	-216	-1.0	-642	-1.8	-483	-0.4		
2008-09	401	1.4	1669	4.1	211	0.8	308	0.8	2589	1.9		
Avg.	423	1.6	667	2.2	109	0.5	438	1.6	1636	1.6		

FM- Financial Margin

R- Ratio

The ratio of financial margin to working fund shows a fluctuating trend. The average 1.6 percent is less than the state average of 2.6. Among the four banks VIDCCB had 2.16 percent higher growth rate than the other banks. The TUDCCB has very low of 0.5 percent during the study period. The negative ratio shows the higher interest paid by the banks and the positive ratio shows the interest earning capacity of the selected banks. The overall picture shows the dissatisfactory performance of the banks in this respect

**1.11.6 RATIO OF COST OF MANAGEMENT TO WORKING FUND**

Cost of management includes salaries and other allowances. The ratio shows the percentage of cost of management to working fund. The optimum is less than 1.

TABLE-1.5: RATIO OF COST OF MANAGEMENT TO WORKING FUND (Rs.in lakhs)

Years	Banks		TIDCCB		VIDCCB		TUDCCB		KADCCB		TOTAL	
	COM	R	COM	R	COM	R	COM	R	COM	R	COM	R
1998-99	310	1.2	464	2.1	135	0.9	214	1.3	1123	1.4		
1999-00	320	1.0	496	1.9	136	0.8	263	1.4	1215	1.3		
2000-01	277	0.9	535	1.9	139	0.8	253	1.3	1204	1.3		
2001-02	250	0.8	579	2.1	187	1.1	238	1.1	1254	1.3		
2002-03	275	1.1	505	1.7	182	1.0	225	0.9	1187	1.2		
2003-04	229	1.0	229	0.8	148	0.9	240	0.8	846	0.9		
2004-05	240	1.0	240	0.8	157	0.8	235	0.8	873	0.8		
2005-06	221	1.0	529	1.8	119	0.7	228	0.7	1096	1.0		
2006-07	204	0.9	402	1.2	133	0.6	192	0.6	931	0.9		
2007-08	217	0.9	527	1.6	147	0.7	216	0.6	1108	1.0		
2008-09	221	0.8	415	1.0	141	0.5	248	0.6	1025	0.8		
Avg.	251	1.0	447	1.5	148	0.8	232	0.9	1078	1.1		

COM- Cost of Management

R- Ratio

The cost of management to working fund ratio had stood up from 1.4 percent in 1998-99 to 0.8 percent in 2006-07; on an average is about 1.1 percent during the study period. Among the four banks TIDCCB and VIDCCB had spent more i.e., an average of 1.3 percent each. Generally, the banks operate at optimal levels as the ratios slightly differ over the state average of 1.3 percent and the optimum level of less than 1 percent. The performance of the banks under this ratio analysis is satisfactory.

**1.11.7 RATIO OF ADMINISTRATIVE COST TO WORKING FUND**

Administrative cost includes all other operating expenses like Rent, Rates, Taxes, Depreciation, Postage, Stationery, etc. This ratio is helpful to assess the percentage of administrative cost on working fund. The optimum level is 2.

TABLE-1.6: RATIO OF ADMINISTRATIVE COST TO WORKING FUND (Rs.in lakhs)

Years	Banks		TIDCCB		VIDCCB		TUDCCB		KADCCB		TOTAL	
	AC	R	AC	R	AC	R	AC	R	AC	R	AC	R
1998-99	206	0.8	99	0.4	61	0.4	214	1.3	580	0.7		
1999-00	416	1.3	784	3.0	69	0.4	129	0.7	1398	1.5		
2000-01	1298	4.4	458	1.6	71	0.4	527	2.7	2354	2.5		
2001-02	711	2.3	1195	4.2	82	0.5	113	0.5	2102	2.2		
2002-03	1870	7.7	571	1.9	68	0.4	92	0.4	2601	2.7		
2003-04	756	3.2	204	0.7	51	0.3	92	0.3	1103	1.1		
2004-05	146	0.6	168	0.6	88	0.4	101	0.3	503	0.5		
2005-06	2261	9.8	1246	4.2	146	0.8	105	0.3	3758	3.6		
2006-07	1083	4.8	840	2.6	89	0.4	113	0.4	2125	2.0		
2007-08	949	4.1	416	1.2	412	1.8	387	1.1	2163	1.9		
2008-09	365	1.3	668	1.7	224	0.8	149	0.4	1405	1.0		
Avg.	915	3.7	605	2.0	124	0.6	184	0.8	1827	1.8		

AC- Administrative Cost

R-Ratio.

The administrative cost to working fund ratio ranges between 3.6 percent and 0.5 percent during the study period. The optimum level of this ratio is being 2 percent; the banks comply with this evidencing the satisfactory performance of the banks in the region. However the TIDCCB has to take steps in minimizing this cost (present average 3.7 percent).

**1.11.8 RATIO OF TRANSACTION COST TO WORKING FUND**

Transaction Cost is the sum of Cost of Management and Administrative Cost. The optimum level is less than 1 percent.



TABLE-1.7: RATIO OF TRANSACTION COST TO WORKING FUND (Rs.in lakhs)

Banks Years	TIDCCB		VIDCCB		TUDCCB		KADCCB		TOTAL	
	TC	R	TC	R	TC	R	TC	R	TC	R
1998-99	516	1.9	563	2.5	196	1.3	427	2.6	1703	2.1
1999-00	736	2.3	1280	5.0	205	1.2	392	2.1	2613	2.8
2000-01	1575	5.3	994	3.6	210	1.3	779	4.0	3558	3.8
2001-02	961	3.2	1774	6.3	269	1.5	351	1.6	3356	3.4
2002-03	2145	8.8	1076	3.6	250	1.3	317	1.3	3788	3.9
2003-04	985	4.1	433	1.5	198	1.2	332	1.1	1949	2.0
2004-05	386	1.6	408	1.4	245	1.2	337	1.1	1376	1.3
2005-06	2482	11.0	1775	6.0	265	1.5	333	1.0	4855	4.6
2006-07	1287	5.7	1243	3.8	222	1.1	305	1.0	3057	2.8
2007-08	1166	5.0	943	2.8	559	2.5	602	1.7	3271	2.9
2008-09	586	2.1	1083	2.7	365	1.3	396	1.0	2430	1.8
Avg.	1166	4.6	1052	3.5	271	1.4	416	1.7	2905	2.9

TC- Transaction Cost

R-Ratio.

The ratio of transaction cost to working fund had decreased from 2.1 percent in 1998-99 to 1.8 percent in 2008-09; on an average it is 2.9 percent during the study period. Comparatively, the TIDCCB and VIDCCB had very high i.e., 4.6 percent and 3.5 percent than the other banks. It is to be noted that the ratio does not match with the state average of 1.1 percent. However the optimum level is 1 percent. Hence it can be concluded that the performance of the banks in this regard is not satisfactory.

**1.11.9 RATIO OF OPERATIVE MARGIN TO WORKING FUND**

Operative Margin is the difference between Financial Margin and Transaction Cost. This ratio helps to assess the percentage of operative margin to working fund. The optimum level is 2 percent and above.

TABLE-1.8: RATIO OF OPERATIVE MARGIN TO WORKING FUND (Rs.in lakhs)

Banks Years	TIDCCB		VIDCCB		TUDCCB		KADCCB		TOTAL	
	OM	R	OM	R	OM	R	OM	R	OM	R
1998-99	-81	-0.3	-31	-0.1	-330	-2.2	-42	-0.3	-484	-0.6
1999-00	-364	-1.2	-949	-3.7	142	0.8	-37	-0.2	-1208	-1.3
2000-01	-1194	-4.1	-620	-2.2	-723	-4.3	-216	-1.1	-2752	-2.9
2001-02	-507	-1.7	-1136	-4.0	-525	-3.0	204	0.9	-1963	-2.0
2002-03	-1614	-6.6	-180	-0.6	25	0.1	123	0.5	-1645	-1.7
2003-04	-428	-1.8	124	0.4	-44	-0.3	759	2.6	412	0.4
2004-05	-24	-0.1	-46	-0.2	337	1.7	657	2.1	925	0.9
2005-06	-2048	-8.9	-978	-3.3	372	2.0	477	1.4	-2178	-2.1
2006-07	-920	-4.1	-86	-0.3	591	2.9	674	2.1	259	0.2
2007-08	-812	-3.5	-923	-2.7	-775	-3.5	-1245	-3.6	-3755	-3.3
2008-09	-186	-0.7	587	1.5	-154	-0.6	-88.1	-0.2	159	0.1
Avg.	-743	-3.0	-385	-1.4	-98	-0.6	115	0.4	-1112	-1.1

OP- Operative Margin

R- Ratio.

The ratio of operative margin to working fund had moved up from -0.6 percent in 1998-99 to 0.1 percent in 2008-09. The average is -1.1 percent during the period under study. Comparatively, the TIDCCB had very less i.e., -3.0 percent than the other three banks. All the banks under study had showed the negative trend. Hence it is to be concluded that the performance of the banks in this analysis is not satisfactory. However the ratio of selected banks noticed that the banks should take necessary steps to overcome the negative one to positive.

**1.11.10 RATIO OF RISK COST TO WORKING FUND**

Risk Cost includes provisions made during the year against bad debts, overdue interest and other debts i.e. incremental bad/ doubtful debts which have to be provided in full. This ratio is computed with the Non- performing Assets and total working fund.

TABLE-1.9: RATIO OF RISK COST TO WORKING FUND (Rs.in lakhs)

Banks Years	TIDCCB		VIDCCB		TUDCCB		KADCCB		TOTAL	
	RC	R	RC	R	RC	R	RC	R	RC	R
1998-99	1374	5.1	2159	8.4	2403	6.9	982	6.0	4777	5.9
1999-00	2203	7.0	2705	9.7	2944	13.5	963	5.1	7728	8.2
2000-01	3306	11.2	2857	10.1	3410	17.5	926	4.7	9881	10.5
2001-02	3946	13.0	3919	13.0	4991	19.5	934	4.3	11147	11.4
2002-03	4727	19.4	4727	16.5	5557	26.4	928	3.8	14565	14.9
2003-04	4838	20.2	3555	12.2	4675	32.2	1530	5.2	16652	16.8
2004-05	4743	19.4	3875	13.1	5589	23.6	1435	4.6	14408	13.8
2005-06	4343	18.9	3826	11.6	5267	30.6	1532	4.6	15339	14.7
2006-07	5275	23.3	4118	12.2	3873	25.4	2172	6.8	16540	15.3
2007-08	5603	24.1	3924	9.7	4832	17.3	1632	4.7	15226	13.3
2008-09	5948	21.1	3366	11.1	4055	17.6	1600	4.0	16304	12.0
Avg.	4210	17	3366	11	4055	21	1330	4.9	12961	12

RC-Risk Cost

R- Ratio

The ratio of risk cost to working fund ratio ranges between 5.9 percent and 16.8 percent during the study period. The optimum level of this ratio being 6 percent, the selected banks comply with this evidencing the dissatisfactory performance of the banks in the region. However the TIDCCB, TUDCCB has to take steps to minimize this cost (present average 16.6 and 21percent).

**1.1.11 RATIO OF MISCELLANEOUS INCOME TO WORKING FUND**

Miscellaneous Income includes income from commission, Brokerage and other receipts i.e. income earned from other than loans and advances and investments. The optimum level is 1 percent. This ratio assesses the percentage of miscellaneous income on working fund.

**TABLE-1.10: RATIO OF MISCELLANEOUS INCOME TO WORKING FUND (Rs.in lakhs)**

Banks Years	TIDCCB		VIDCCB		TUDCCB		KADCCB		TOTAL	
	MIS	R	MIS	R	MIS	R	MIS	R	MIS	R
1998-99	37	0.1	78	0.3	370	2.4	72	0.4	558	0.7
1999-00	36	0.1	47	0.2	628	3.5	106	0.6	817	0.9
2000-01	51	0.2	175	0.6	662	3.9	63	0.3	951	1.0
2001-02	60	0.2	118	0.4	518	3.0	123	0.6	819	0.8
2002-03	70	0.3	68	0.2	448	2.4	95	0.4	682	0.7
2003-04	79	0.3	102	0.4	359	2.1	151	0.5	690	0.7
2004-05	58	0.2	1367	4.7	296	1.5	201	0.6	1921	1.8
2005-06	69	0.3	67	0.2	255	1.4	114	0.3	505	0.5
2006-07	50	0.2	103	0.3	274	1.3	499	1.6	926	0.9
2007-08	47	0.2	339	1.0	341	1.5	1868	5.4	2594	2.3
2008-09	61	0.2	95	0.2	430	1.6	108	0.3	694	0.5
Avg.	56	0.2	233	0.8	416	2.2	309	1.0	1014	1.0

MIS- Miscellaneous Income

R- Ratio

The miscellaneous income to working fund ratio had increased from Rs. 558 lakhs in 1998-99 to Rs.694 lakhs in 2008-09. The average per bank was Rs. 1014 lakhs during the period under study and the ratio stands at 1.0 percent. The higher ratio indicates higher income earnings by the banks. Among the four banks, the TUDCCB had the highest miscellaneous income. The ratio is at higher levels than the state average of 0.3 percent during second half of the study period which is a good sign of efficiency. It implies that the effort should be taken by the all banks to reach the optimum level of one percent. Hence it is to be concluded that the performance of the banks in this respect is satisfactory.

**1.1.12 RATIO OF NET MARGIN TO WORKING FUND**

Net Margin is operating Margin (-) Risk Cost (+) Miscellaneous Income. This reflects the ability of the bank to produce a surplus after meeting all costs. This ratio helps to assess the percentage of net margin on working fund. The optimum level is 0.5 percent.

**TABLE-1.11: RATIO OF NET MARGIN TO WORKING FUND (Rs.in lakhs)**

Banks Years	TIDCCB		VIDCCB		TUDCCB		KADCCB		TOTAL	
	NM	R	NM	R	NM	R	NM	R	NM	R
1998-99	-44	-0.2	47	0.2	8	0.1	30	0.2	41	0.1
1999-00	-328	-1.0	-902	-3.5	-41	-0.2	70	0.4	-1203	-1.3
2000-01	-1143	-3.9	-444	-1.6	-949	-5.7	-152	-0.8	-2689	-2.9
2001-02	-298	-1.0	-320	-1.1	-791	-4.5	55	0.3	-1354	-1.4
2002-03	-1544	-6.4	-111	-0.4	-987	-5.2	93	0.4	-2550	-2.6
2003-04	-348	-1.5	-348	-1.2	-331	-1.9	111	0.4	-917	-0.9
2004-05	953	3.9	1908	6.6	1506	7.6	508	1.6	4876	4.7
2005-06	-1979	-8.6	-497	-1.7	-710	-3.9	-432	-1.3	-3618	-3.5
2006-07	-566	-2.5	6.09	0.1	778	3.8	10	0.0	227	0.2
2007-08	-2065	-8.9	-585	-1.7	-783	-3.5	53	0.2	-3379	-3.0
2008-09	102	0.4	722	1.8	5	0.0	5	0.1	833	0.6
Avg.	-660	-2.7	-48	-0.2	-209	-1.2	31.8	0.1	-885	-0.9

NM-Net Margin

R-Ratio.

The net margin of the banks in the region increased from Rs. 41.3 lakhs in 1998-99 to Rs. 833 lakhs in 2008-09 with negative figures for many years in between an average of about Rs. -884 lakhs during the study period. The average ratio stood at -0.9 percent during the period under study. Among the four banks, the KADCCB had no loss during the study period except in the year 2000-01. Any way the performance of all the banks in this respect is not satisfactory. It is evident that the banks have to increase this ratio by minimizing risk cost, the operating margin, extending increased services and more of miscellaneous income to reach the optimum level.

**1.12 FINDINGS**

The present study, "A study on the working fund ratio of the DCCBs in Tirunelveli Region, Tamilnadu State" is an analytical one. The study was conducted in Tirunelveli Region, Tamilnadu state. Among the five Cooperative Regions in Tamilnadu, Tirunelveli Region covering four DCCBs was selected and secondary data were used for the analysis. A decadal period was covered by this (1998-99 to 2008-09). Statistical tools of statistical like average and ratio were used for analysis. The major findings and conclusion are presented in the following paragraphs.

**WORKING FUND RATIOS****Total Working Fund**

The average working fund per bank was worked out as Rs.102798 lakhs per bank. Comparatively, the VIDCCB had highest working fund followed by KADCCB and TIDCCB and the TUDCCB has the lowest working fund. The working fund of the banks in the region may reach Rs. 159696 lakhs in 2025-26 i.e., is after fifteen year. Various ratios in relation to working fund are discussed here under.

**Financial Return to Working Fund Ratio**

This ratio indicates the caring ability of the banks and concentrate to generate more income on loans and investment. All the selected banks were more or less performed equally and very nearer to the state average of 11.2. Hence it is concluded that financial return to working fund ratio of the banks in this region is satisfactory.

**Ratio of Financial Cost to working fund**

The calculation reveals that the financial cost to working fund ratio of the selected banks had decreased from 8.2 percent in 1998-99 to 7.5 percent in 2008-09; on an average is 7.4 percent per annum during the study period (State average is 8.1). The TIDCCB, VIDCCB and TUDCCB has relatively low ratios (7.3, 7.1 and 6.7 percent) when compared with other banks. The other bank of KADCCB has a higher financial cost which is to be minimized in the fourth coming years so as to earn more profits. However the figure for the whole region shows the poor position.

**Ratio of financial margin to working fund**

The ratio of financial margin to working fund shows the fluctuating trend. The average 1.6 percent is marginally less than the state average of 2.6. Among the four banks VIDCCB had 2.16 percent higher growth rate than the other banks. The TUDCCB has very low 0.5 percent during the study period. The negative ratio shows the higher interest paid by the banks and the positive ratio shows the interest earning capacity of the selected banks. The overall picture shows the satisfactory performance of the banks in this respect.

**Ratio of Cost of Management to Working fund**

The cost of management to working fund ratio had stood up from 1.4 percent in 1998-99 to 0.8 percent in 2006-07; on an average is about 1.1 percent during the study period. Among the four banks TIDCCB and VIDCCB had spent more i.e., an average of 1.3 percent each. Generally, the banks operate at optimal levels as the ratios slightly differ over the state average of 1.3 percent and the optimum level of less than 1 percent. The performance of the banks under this ratio analysis is not satisfactory.

**Ratio of Administrative Cost to working fund**

The administrative cost to working fund ratio ranges between 3.6 percent and 0.5 percent during the study period. Among the four banks TUDCCB and KADCCB had very low 0.6 percent and 0.8 percent and TIDCCB and VIDCCB had very higher 3.7 percent and 2 percent during the study period. The optimum level of this ratio is more than 1 percent and the banks comply with the evidencing the satisfactory performance of the banks in the region respectively.

**Ratio of Transaction Cost to Working Fund**

The ratio of transaction cost to working fund had increased from 2.1 percent in 1998-99 to 1.8 percent in 2008-09; on an average it is 2.9 percent during the study period. Comparatively, the TIDCCB and VIDCCB had very high i.e., 4.6 percent and 3.5 percent than the other banks. It is to be noted that the ratio is not match with the state average of 1.1 percent. However the optimum level is 1 percent. Hence it can be concluded that the performance of the banks in this regard is not satisfactory.

**Ratio of Operative Margin to Working Fund**

The ratio of operative margin to working fund had moved up from -0.6 percent in 1998-99 to 0.1 percent in 2008-09. The average is -1.1 percent during the period under study. Comparatively, the TIDCCB had very less i.e., -3.0 percent than the other three banks. All the banks under study is showed the negative trend. Hence it is to be concluded that the performance of the banks in this analysis is not satisfactory. However the ratio of selected banks noticed that the banks should take necessary steps to overcome the negative one to positive.

**Ratio of Risk Cost to Working Fund**

The total risk cost of the selected banks had decreased from Rs. 693 lakhs in 1998-99 to Rs. 278 lakhs in 2008-09; with the average amount of Rs. 501 lakhs. The yearly average risk cost to working fund was 0.5. Comparatively, the TUDCCB has highest risk cost (2 percent). The VIDCCB has low i.e., 0.4 percent than the other three banks during the study period is not good. Hence it is to be concluded that the performance of the banks is not satisfactory.

**Ratio of Miscellaneous Income to Working Fund**

The miscellaneous income to working fund ratio had increased from Rs. 558 lakhs in 1998-99 to Rs.694 lakhs in 2008-09. The average per bank was Rs. 1014 lakhs during the period under study and the ratio stands at 1.0 percent. The higher ratio indicates higher income earnings by the banks. Among the four banks, the TUDCCB had the highest miscellaneous income. The ratio is at higher levels than the state average of 0.3 percent during second half of the study period which is a good sign of efficiency. It implies that the effort should be taken by the all banks to reach the optimum level of one percent. Hence it is to be concluded that the performance of the banks in this respect is satisfactory.

**Ratio of Net Margin to Working Fund**

Ratio of net margin to working fund indicate that the net margin of the banks in the region increased from Rs. 41.3 lakhs in 1998-99 to Rs. 833 lakhs in 2008-09 with negative figures for many years in between an average of about Rs. -884 lakhs during the study period. The average ratio stood at -0.9 percent during the period under study. Among the four banks, the KADCCB had no loss during the study period except in the year 2000-01. Any way the performance of all the banks in this respect is not satisfactory.

**TABLE 1.12: WORKING FUND RATIO RESULTS**

S. No	Name of the Ratios	TIDCCB		VIDCCB		TUDCCB		KADCCB	
		S	NS	S	NS	S	NS	S	NS
WORKING FUND RATIO									
1	Financial Return to working fund	S	-	S	-	S	-	S	-
2	Financial Cost to Working fund	S	-	S	-	S	-	S	-
3	Financial Margin to Working fund	S	-	S	-	S	-	S	-
4	Cost of management to Working fund	-	NS	-	NS	S	-	S	-
5	Administrative Cost to Working fund	-	NS	S	-	S	-	S	-
6	Transaction Cost to Working fund	-	NS	-	NS	-	NS	-	NS
7	Operative Margin to Working fund	-	NS	-	NS	-	NS	-	NS
8	Risk cost to Working fund	-	NS	-	NS	S	-	S	-
9	Miscellaneous Income to Working fund	-	NS	-	NS	S	-	S	-
10	Net margin to Working fund	-	NS	-	NS	-	NS	-	NS
	Total	3	7	4	6	7	3	7	3

S: Satisfactory

NS: Not Satisfactory

**1.13 CONCLUSION**

Invariably in all the selected DCCBs of this study conducted in the Tirunelveli Region of the Tamilnadu State TIDCCB and VIDCCB was not satisfactory and TUDCCB AND KADCCB was satisfactory were found especially with reference to position in working fund ratio. The 'KRA's (Key Result Areas) with reference to working fund ratio was not upto the mark.

**1.14 SUGGESTIONS**

The major income and expenditure portfolio in banking are "interested collected" and "interest paid". On the expenditure side establishment expenses (includes salary bill) contributes a major portion (or) chunk. The experience in banking industry over the last decade is that introduction of technology as reduced the man power requirements and therefore the salary bill of the banks.

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# THE ROLE OF SOCIAL ENTREPRENEURSHIP APPROACH IN ENCOURAGING GROWTH OF SUSTAINABLE ENTERPRISES

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## ABSTRACT

*Social entrepreneurship is a new approach of business venture where enterprises are established with the objective of addressing the social exclusions among the communities. This paper seeks to give a highlight on how Social entrepreneurship/Community driven enterprise can contribute establishment of sustainable enterprises. To understand social entrepreneurship a discussion of the drivers of social entrepreneurship is made, where the key drivers is the social economic stress in any community; in the literature review two theories are discussed, i.e organizational theory and Resource deficiency theory. Various case studies across the world and in Kenya are analysed to establish the success level of social enterprises and the contributing factors. In conclusion it is observed that the Social enterprises bring together the community since such enterprises are created to address the community social needs, this fact increases the support from the community in form of market, new ideas and social backup hence contributing to its sustainability.*

## KEYWORDS

Social enterprise, sustainable enterprise.

## INTRODUCTION

 Social entrepreneurship has created a high expectations, it is welcomed as a new approach of overcoming poverty solving social exclusion in the developing world (Seelos and Mair 2005). It is heralded as a new mechanism for solving social ills and satisfying human needs in the developed world (Mawson, 2008). Indeed there are impressive examples of how social entrepreneurs around the world have come up with innovative and far reaching solutions to hitherto unmet social and ecological challenges (Bornstein, 2004; Elkington and Hartigan, 2008). For many social entrepreneurship promises new "hope for sustainable developments" (Seelos and Mair, 2009) while others argue that social entrepreneurship and the concept of social business hold the key to building a new kind of capitalism (Yunus, 2007; 2010).

It is not hard to see how individual social entrepreneurs have created considerable change in their specific fields but the questions are, to what extent does the social entrepreneurship approach assist in establishment of sustainable enterprises? A lasting impact on the society can only be achieved if there is a lasting solution to their problems, considering that social entrepreneurial approach has in mind the needs of the society the impact of this can only be felt if they are able to establish sustainable enterprises within the communities. This paper reviews the conditions that encourage the emergence of social entrepreneurship and how the social entrepreneurship approach contributes to establishment of sustainable enterprises.

There is need to create more inclusive business models that directly integrate low income consumers, these entire requirements needs more collaborative approaches between large companies, small enterprises and public entities, civil society organization and the poor people themselves. Entrepreneurship among low income people is not well understood posing challenges to strengthening entrepreneurship efforts at the local context (Bruston et al., 2008, Naude 2010).

In the recent years both management scholars and business practitioners have gained interest in the Base of the Pyramid (BOP). BOP refers to the invisible bottom of the pyramid mainly in the developing countries which is made up of 4 billion people with an annual purchasing power parity of less than US 1500 per year (e.g Prahalad and Hart, 2002, Hammond et al, 2007), as referred by Paula 2010. The greater parts of previous studies on BOP have focused on analyzing multinational corporations (MNC) strategies. Nevertheless, Prahalad (2005) saw the role of the local not only as consumers but also as producers and innovative entrepreneurs. For the MNCs to succeed in the BOP, management needs to liaise with local communities is seen a critical factor (e.g Beshouri, 2006). While these strategies do involve the local entrepreneurs views, the role is very narrow. e.g the common assumptions made that poor people at individual level are willing to be entrepreneurs, have been questioned (Karnaki 2009; Lee 2009; Naude 2008). Although the entrepreneurial opportunities are recognized, the nature of entrepreneurship in BOP not well understood (Webb et al., 2009) hence meaning that perhaps suitable model of entrepreneurship is not yet developed. Torri (2009) argues that, the problem is that traditional concepts of entrepreneurship do not appear to capture the essential features of investing in depressed areas.

This paper is organized as follows; after definition of terms we give the conditions that encourage the emergence of social enterprises. In the literature review a review of the relevant growth theories is analyzed and then highlighting the key findings relating to the research questions.

## DEFINITION OF SOCIAL ENTREPRENEURSHIP

There is no uniform definition of Social Entrepreneurship some definitions have focused on social entrepreneurship as combining commercial enterprises with social impact, whereby entrepreneurs have used business skills and knowledge to create enterprises that accomplish social purposes and in addition being commercially viable (Emerson & Twersky 1996). Others emphasize that social entrepreneurship as innovating social impact, they thus focus on innovation and social arrangements that have consequences for social problems with little attention to the economic viability by ordinary business criteria (Dees 1998). In this case the social entrepreneur will focus on social problems, they create innovative initiatives, build new social arrangements, mobilize resources in response to those problems rather than market criteria. Others view social entrepreneurship as a way to catalyze social transformation, in this case the social entrepreneur can produce small changes in the short term that reverberate through existing systems to catalyze large changes in the longer term (Ashoka Innovators 2000). Here the entrepreneur needs to understand not only immediate problems but also the larger social systems and its interdependencies so that they can introduce new paradigm at critical leverage points that lead to cascade of mutually reinforcing changes on social arrangements.

For the purpose of this paper we are interested in the social entrepreneur whose interest is to address the social needs at the same time be able to run and sustain the enterprise in the long run so that the needs are not only addressed for a short while and they recur but fully addressed, also such an entrepreneur who will seek to address such needs by bringing together the community to act together. This is that kind of entrepreneur who is able to create innovative solutions to immediate social problems and mobilizes the ideas, capacities, resources and social arrangements required for sustainable social transformation/ entrepreneurship. The enterprise may be owned by an individual or by the community, that is a community based enterprise.



**COMMUNITY BASED ENTERPRISE**

Community Based Enterprise (CBE) can be defined as "a community acting corporately as both entrepreneur and enterprise in pursuit of the common good." Paredo and Chrisman (2004). CBEs are managed and governed to pursue the economic and social goals of a community/member in a manner that is meant to yield sustainable individual and group benefits over the short- and long-term. Torri (2009) has defined CBEs as "the innovative recombination of pre existing elements of activity by inhabitants with a shared interest living in a small basic administrative or statistical area" Torri reminds that the idea of members acting "together" should be understood, some members may be more active than others, but most or all will have some role in developing and implementing the entrepreneurial initiative. Such social enterprises are therefore created to serve social objectives and in most cases the surplus/ profits are re-invested in order to make the business grow and at some point the surplus is distributed to the members. They are generally motivated by the fact that the community has some common characteristic mainly in terms of culture, similar constraints e.t.c. Due to these common needs the community is motivated to come together and think through their challenges and try to address their needs in a communal way. Entrepreneurial accomplishments may not be compatible with diverse social arrangements, but, but may benefit from the integration of specific cultural norms (Anderson, 2002; Basu & Altenay, 2002; Light & Rosenstein, 1995). The facts suggest that the possibility that cultural identity may actually function as a tool for entrepreneurial activity (Light & Rosenstein, 1995), example is that ethnic ties are known to promote cooperation and hence entrepreneurial activities. People who share the same culture for example tend to work closely especially where they are migrants to the area. CBEs arise in response to some combination of economic crisis and lack of individual opportunity, social alienation of individual sub-group e.g. the IDPs in Kenya, environmental degradation e.t.c. A major impetus for CBEs appears to be a threat that causes a community to perceive a major disequilibrium in its way of life, in the efforts to gain/regain control then the CBEs emerge.

**CONDITIONS THAT ENCOURAGE THE EMERGENCE OF COMMUNITY SOCIAL ENTERPRISES**

*Social/ Economic Stress*- The economic and social stress witnessed among the communities forces them to come together to solve such pressing issues which sometimes include the attempt to address the absence of political power or a voice in national life. CBEs characteristically arise in response to some combination of the following: a) economic crisis and a lack of individual opportunity; b) the processes of social disintegration; c) social alienation of a community or sub-group from mainstream society; d) environmental degradation; e) post-war reconstruction; f) volatility of large business. Where they occur, these factors are typically a reflection of major macro conditions such as national economic crises and political violence.

Overall, then, a CBE emerges as the result of the desire of communities to gain or regain control of their own local development. In the parlance of Minniti and Bygrave (1999), adverse economic circumstances in a community give rise to a novel solution; in this case, the community-based enterprise. What is striking, however, is the way that this "novelty" is a legacy of long-standing resources in tradition and culture.

*A product of incremental learning*-A Community social enterprise is the result of a process grounded in collective experience (Helmsing, 2002). Most often, the communities in which Social Enterprises emerge have been previously involved in collective political action, e.g., demanding access to basic services from the government, contesting government reforms, or protesting against such conditions as counterinsurgency or large-scale landownership. These previous activities may result in the development of tacit knowledge, embedded within the community, with regard to organizing to achieve goals (Spender, 1994).

*Availability of Social Capital*-Social capital is a community's major resource (Bourdieu, 1997; Coleman, 1988; Flora, 1998). In fact, one could argue that the community itself is often the major and most valuable asset of a social enterprise. CBEs emerge characteristically in areas where there is lack of significant material resources, in many cases, land in the area is scarce and impoverished, and there is little or no access to capital markets. In such a situation it is broadly recognized that people depend on social relations — social capital — to address their substantive everyday needs. CBEs are created on the basis of collectively owned cultural, social, and ethnic endowments. These are historical products that create solidarity among community members and receptivity to collective action. Community networks allow resources to be pooled, actions to be coordinated, and safety nets to be created that reduce risks for individual community members (Bourdieu, 1997; Putnam, 1973). Furthermore, the inter-relationship between community and family enables the CBE to take risks not open to an individual. It is precisely the ability of the CBE to marshal and exploit social capital that gives it added potential in conditions of chronic scarcity and fierce global competition.

*Community size*-As with any entrepreneurial venture, the start-up and success of a CBE require that the community possess, or have access to, sufficient resources to launch the enterprise (Chrisman, Bauerschmidt, & Hofer, 1998; Gartner, 1985; Katz & Gartner, 1988). With regard to other resources, we assume that in poor communities the amount of resources available on a per-capita basis is generally low. Therefore, larger communities should have an advantage in the creation of CBEs vis-à-vis smaller communities. However, the relationship should not be linear. As stated earlier, a critical resource for CBE is the social capital that exists in a community. Since the number of potential relationships in a social network increases factorially with the addition of each new person into the community/group, we argue that very large communities will have extremely complex and fragmented social networks. While conducive to individual entrepreneurship, we see such networks as a detriment to the formation of CBEs. For example, Kranton (1996) illustrates the fact that reciprocal non-market exchanges are more likely and provide greater benefits in smaller markets owing to the likelihood of frequent, future contacts.

Furthermore, because of the importance of social capital, smaller communities are more likely to achieve solidarity in terms of their subjective assessments of the initial endowments needed to form community-based enterprises (Minniti & Bygrave, 1999). It is therefore assumed that CBEs are far more likely to arise and maintain themselves in communities of moderate size, rather than those with very small or large populations. The cooperative movement in Kenya has proved that the more members each cooperative has the higher the chances of growth; thus, while the cooperatives continue to coordinate their organization and activities as one enterprise, each "business unit" is restricted in size (Greenwood, 1991; Morrison, 1991; Suzuki, 1995).

**CONCEPTUAL FRAMEWORK**

This study will consider the following independent variables as factors that affect the growth of the Social enterprises.

*Ability to recognize opportunities and the persistence to form a business enterprise.* Venkataraman (1997) describes the two issues of interest to scholars in entrepreneurship, the source of opportunity and enterprising individuals, the social entrepreneur who is mainly the founder of the such enterprise will exhibit perceived self efficacy related to new venture and will have a propensity to act on the intent to form the venture (Harrold and Barbara).

*Collective Action/Social Capital:* The success of the social enterprises highly depends on the support from the community or the group members; Johanison (1998) suggests that individuals retain their identity but acts within a collective group they also create social networks which contributes to the creation of new ventures. The collective action is able to bring the diverse cognitive attributes of the group members together, this allows the tapping of the diverse professional skills held by the group and also expands the networks held by the group as a whole, all such factors will contribute in creation of new ventures and diversification for the purpose of sustainability. In social entrepreneurship the ability to build and exploit social resources builds the platform for offensive (as opposed to defensive) venturing (Johanison 1998: as quoted by Harold & Barbara). The collective contribution of the members to the social enterprise is key to its success, social commitment also counts to the success. In collective community based enterprise, the founding collective unit exhibits characteristics similar to individual entrepreneurs i.e. perceived self efficacy, related to new ventures and propensity to act on the intent to form a new venture (Harold and Barbara). Social capital is a community's major resource (Bourdieu, 1997; Coleman, 1988; Flora, 1998). In fact, one could argue that the community itself is often the major and most valuable asset of a CBE. Communities where CBEs emerge characteristically lack significant material resources. CBEs are created on the basis of collectively owned cultural, social, and ethnic endowments. These are historical products that create solidarity among community members and receptivity to collective action.

*The size of the community/ number of members involved*-the more the members in a community enterprise the higher the chance of growth, since they tend to bring in more contributions in terms of ideas and capital. Community networks allow resources to be pooled, actions to be coordinated, and safety nets to be created that reduce risks for individual community members (Bourdieu, 1997; Putnam, 1973).

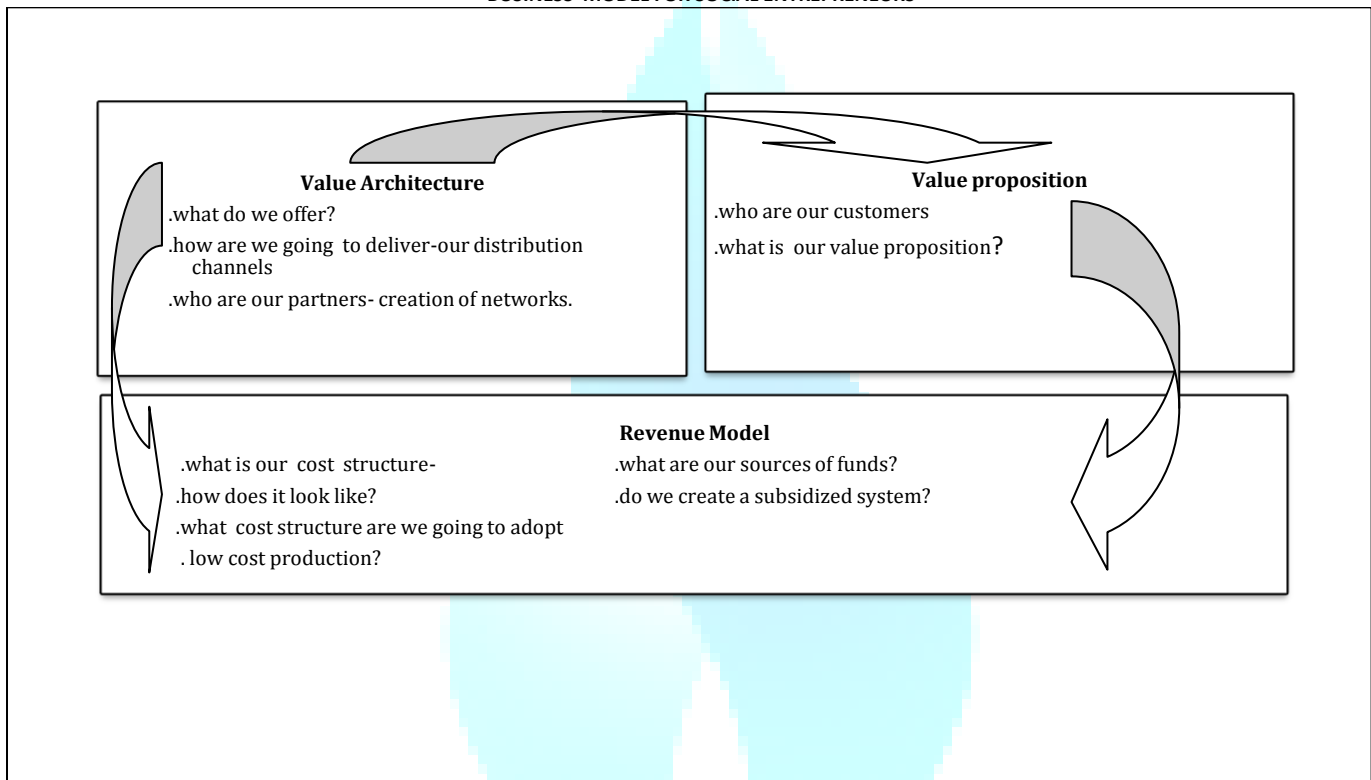
*Availability of financial capital/the level of funding*- the availability of funding in support of the community enterprise also affects the growth. Where there is sufficient funding by either external or internal sources will have a direct impact on how the enterprise will perform. The level of internal funding is affected by the number of members in the group and their contribution towards the capital, the higher the contribution the higher the capital hence the higher the

chances of growth. Likewise the level of capital affects the level of access to loans within the banking system, the loan advanced for the purpose of funding will depend on the level of savings held by the group and their ability to repay, and hence the member contribution will have an impact on the funding by the banks.

#### BUSINESS MODEL FOR SOCIAL ENTREPRENEURS

The building blocks of a business model are value proposition, value architecture and revenue model. The social entrepreneurs value proposition is typically linked to mitigating social or environmental problems, they start their businesses to serve basic humanitarian needs, distribute scarce resources and take care of needs of future generations by promoting environmental behavior (Seelos & Mair 2005). Successful social entrepreneurs are not satisfied with treating the symptoms, they want to eliminate the root cause of the problem. Social entrepreneurs often engage partners and beneficiaries in creation of the product. They have to deal with resource limitations a hurdle which they can overcome by building networks (Grichnik et al., 2010) bringing together volunteers commercial and non commercial. Innovative resource mobilization strategy adopted by social entrepreneurs and involvement of partners and beneficiaries evokes a sense of responsibility among the beneficiaries. The revenue model for social entrepreneurs may comprise both donor funds and partly from internally generated profits. Social businesses generates turnover and profits and thus is self sustaining. Financial surpluses are re-invested in the venture and used to grow the solutions. Earned income is inherently more sustainable than other forms of revenue for social purpose entrepreneurs. Diversified funding strategy often include some earned income can contribute to the financial sustainability.

#### BUSINESS MODEL FOR SOCIAL ENTREPRENEURS



Own illustration based on Susan Muller (2012)

#### METHODOLOGY

The Research is a desk research, a review of existing theories and empirical studies is done and findings and conclusions derived from the review.

#### LITERATURE REVIEW

This section reviews various theories and their relevance to social entrepreneurship. *Organizational theory* examines the effect that an operating environment places upon a given organization or set of organizations (Zucker, 1997; Meyer & Rowan 1977, Di Maggio & Powel 1983, Scott 1987). The solution provided to coping with external pressure is institutionalization of rational structures. As markets expand, the rational networks in a given domain become more complex and differentiated and organizations in that domain must manage more internal and boundary spanning inter dependencies because of the need for internal coordination increases under these conditions and because formally organizations with rationalized formal structures tend to develop (Meyer & Rowan 1977). The adoption of rational structures described above leads to a state of isomorphism in a population of organization and is three fold. The first stage is habituation (new forms arise to meet the challenges within the society), the second stage is objectification (evaluation of a new structure how the new idea will be managed) and the final stage is sedimentation (diffusion of the structures throughout the population- creating a legitimization) (Tolbert & Zucker 1995). After sedimentation the form is considered institutionalized hence rationally suited to the environmental forces. This change process can be elaborated by examining the forces that dictate the move to isomorphism. Three specific isomorphic pressures are coercive, mimetic and normative (DiMaggio & Powel 1983; Scott 1983). Coercive Isomorphism results from organizational desire to gain legitimacy within their operating domain or population (Di Maggio & Powel 1983). Essentially, coercive pressure is placed upon organizations of legal authority or resource control over the respective organizations. Hence forms of all organizations within that population are rationally organized to gain legitimization or acceptance from external institutions. Mimetic isomorphism is an organizations response to uncertainty in the environment, causing the organization to adopt systems and techniques perceived a successful by other organizations (Di Maggio & Powel 1983; Scott 1987). Searches for "best practices" in an operating environment, the adoption of human resources programmes and similar service provision are all examples of isomorphism. Social entrepreneurship as a movement seems to exhibit some of the properties associated with mimetic isomorphism.

Resource Dependency Theory deals with specific input pressures placed on an organization from the environment. It is a rational model that incorporate both endogenous and exogenous variable perspective (Sherer & Lee; 2002). The endogenous variable perspective looks at resources as a fixed supply or scarce. The repetitive use of endogenous variables creates competitive tension between firms to attain the diminishing quantity of the fixed resource. Exogenous variables create scarcity brought about by demand pressures which increases the scale of production. The presence of scarcity in both the arguments implies that a firm designs its system in a way that enables them to attain the necessary resources to be successful. This can be equated to the factors that encourages emergence of social entrepreneurship in that it arises due to the scarcity or systems failure to provide the essential needs. Other research confirmed this observation in the

area of hospitals that have been forced to adopt to the changing medicare policies (Clark & Estes, 1992; Coppola, Hudak & Gidwani), these are essential social needs that needed to be addressed.

## CASE STUDIES OF SOCIAL ENTERPRISES

**WELFARE COOPERATIVES: THE POOLING AND CONVERSION OF ENTITLEMENTS IN SWEDEN:** Welfare service cooperatives illustrate some of the central features of the Swedish welfare state's institutions, and the way these were taken advantage of by social entrepreneurs. The Swedish tradition of solving social problems and answering needs through public (rather than private) intervention eventually led to a virtual public monopoly over welfare, education, and employment services, safeguarded by regulations that prohibited private financing for those services that are provided by the public sector and by norms that strongly inhibit donations, such practices hindered the emergence of non-public initiatives within health education and welfare until the 1980s. The emergence of parent cooperatives played an important role in breaching this trend and in opening the field for new social initiatives. The Parent Cooperatives basic model is relatively simple, both conceptually and resource-wise: parents' statutory entitlement to day-care for their children (that should otherwise be met by municipal units) is converted into a public subsidy for a child-care place. A group of parents' forms an association that pools these (otherwise inconvertible) entitlements, creates the appropriate governance structure, establishes a kindergarten for the members' children, and recruits the professional staff (Pestoff, 1998; Stryjan and Wijkström, 1996). At the core of this arrangement stands, on one hand, the conversion of a statutory obligation to provide day-care into a welfare entitlement that is, in turn, convertible into funding, and on the other, the welding together of the entitlement holders into a functioning social and organizational entity. The rule-modification that made such transactions possible was accomplished by "wild" initiatives, the first of which started as early as 1974, but the form's institutional breakthrough came first in 1985. The first parent cooperatives operated in an institutional limbo, surviving through shrewd maneuvering between the national and municipal financing systems, significant material concessions, advocacy, and sheer persistence. Participants' commitment and the undertakings' entrepreneurial and innovative dimension were crucial in that stage, but gradually waned in pace with the organizational population's rapid expansion throughout the 1980s (to nearly a thousand in 1992), and the ensuing institutionalization of the form. Most PCs that are active at present could be regarded as small businesses run by collective proprietors, rather than as entrepreneurial ventures; activity is highly regulated (strongly limiting the ability to diversify the operation into new fields), and the enterprise's social aspirations are restricted to maintaining and reproducing the parent/member group itself, a task that naturally includes recruiting new parents, as children move on to school, but also eliciting their considerable outlays in fees, voluntary time and competence.

The merit of the model lies in its simplicity and replicability. Parent-cooperatives rely on a single mechanism of resource-conversion, whereby parents that join the cooperative bestow on it entitlements that are disbursed by the public sector. Once this mechanism is established, maintaining the group is the one necessary and sufficient condition for continued financing.

In Zimbabwe creative Oils investments Baobab tree (*Adonisnia digitata*) based enterprise supported by Southern Alliance For Indigenous Resources (SAFIRE) located in Rusinga District; has adopted the community based enterprise model. It consists of a central business unit (Secondary processing unit) made up of selected entrepreneurs from the community supported by wider community primary producers. The fruits are sourced directly from primary processors who convert fruits into pulp and seed. The fruit pulp and seed are bought through agents residents in the village (SAFFIRE 2003). The Enterprise produces and average of 500 kg of oil per month for six months harvesting period. This represented ZWD625,000 per month income for community of 150 households who supplied raw fruit to the enterprise in 2003. Demand for these products still outstrips the supply in the market. The by-products are sold to the local community and commercial beef producers.

Sustainable social enterprises cuts across the world; In India Self Employed Women (SEWA) formed in 1972 in Ahmedabad began a coalition of poverty-level women and has evolved into a powerful union, initiating a powerful union, and a self help grass-root business strategies for women, which has served as a model for similar organization in Africa, Thailand, Mexico, Poland, and the US (2000;55). SEWA offers micro-credit, bank lending, literacy programmes, business cooperatives (including a dairy cooperative in which women owners sell to the mainstream dairy industry), childcare cooperative activities to increase the economic power and stability of members. A community based multiplication program in Tanzania started sharing seeds and seed multiplication techniques. This initiative has spread to 42 villages and includes training in seed production, quality control, storage and marketing (Mwaisela 2000).

While working with the poor in Bangladesh, Yunus recognized that many desired to stand on their own feet, for example, by founding their own small business. To do this they needed capital, mostly small amounts, to buy a sewing machine or similar basic tools. Yet, banks were not willing to give the poor loans. They found the risk too high, as no income existed to date, and there was no security available. The bureaucratic processing of these credits also resulted in more costs than the microloans could cover. The Grameen Bank, founded by Yunus, created an innovative way to make microloans feasible. The bank developed an administration and collection process led by "lending circles", formed by a number of borrowers in each community. Within this circle, borrowers would monitor each other and check that each one of them pays back their loans timely and correctly. Defaults make the community as a whole lose credibility. Like this, debtors are motivated to comply with their payment commitments, as they do not want to let down their social network. By involving the community, both the administrative work and a payback security are ensured. These lending circles lead to payback rates higher than those of many large-scale banks. In a social entrepreneurial sense, through this innovative action, social goals were achieved through business. On the one hand, the poor found access to the microloans they needed to establish a source of regular income.

In Kenya Ingrid Munro an alumni of Muhammad Yunus started Jamii Bora Organization whose main objective was to address the challenges of shelter faced by the women in Mathare, most of whom did not have a stable source of living. The group being unemployed was sidelined by the banks in terms of credit lending due to lack of collateral. Most of the initial members included unemployed youth and needy women who used to rove Nairobi as gangs of thieves and street families. The organization mobilized these groups and encouraged savings among the group and lending to group members at a manageable interest rate at the same time growing their capital. The enterprise has been able to provide shelter through mortgage and also establish a microcredit institution targeting the low income group in the slums.

Ochieng A (2007) also noted an emerging approach where new technologies are invented while the existing ones are adapted to suit the specific needs of the poor people. This is also a social enterprise approach since inventions are made with the social needs in mind. Kickstart a nonprofit organization in Kenya develops, adapts and markets technologies in Africa. The NGO identifies business opportunities that can be created to meet the needs of the communities and that can be run by the locals, they develop technologies and business packages as per the needs of the community, they train manufacturers to produce new technology and develop market among small scale business (ochieng 2007), examples of products include brick press, oil press, tread pump and hip pump (a manual water pump). Kickstart estimates that \$52 million per year of profit and wages is generated under the new business across Africa (Ochieng, 2007). One of the key actions that help foster the success of these ventures is developing demand driven products.

The welfare cooperatives in Sweden came up as a result of a gap in the system i.e failure of the government to address the social needs of child welfare, the idea was also created through a wild initiative by some group members who felt that they could do something to correct the existing gap within the society. The growth of the enterprise was enabled by the increase in numbers coupled by the participants commitments and innovations, the financial capacity of these cooperatives was addressed by affiliations with other funding institutions.

The Creative Oils investments Baobab in Zimbabwe has the support of SAFFIRE and also that of the community. The entrepreneurs give the professional and entrepreneurial support to the enterprise, the locals produce the raw materials and at the same time offer market for the products. This comes as both the social capital and financial capital since the provision of market for the oil products enables the enterprise to grow.

The growth of the Grameen Bank in Bangladesh was also as a result of failure of the existing systems to address the credit needs of the small scale entrepreneurs due to lack of collateral as required by the banks. The growth of the Bank was enabled by the support from the community which was evidenced in the increase in numbers and the low default rate.

Similarly the growth of Jamii Bora was as a result of the gap that existed among the street families who could not be trusted by the financial institutions for lending, the families has a common social problem of lack of shelter and access to loans.



Previous experiences both from development projects and market oriented initiatives have proved that to be sustainable, business initiatives need to be owned and informed by local stakeholders themselves (Dordija et al 2001; Torri 2009) Korsching and Allen (2004) are linking social entrepreneurship with economic development strategy and viewing it as embracing within the broader concept of community development. One was of strengthening the local level engagement is the creation of CBEs which means adopting a holistic approach both to local and entrepreneurial development. Paredo & Chrisman 2004; Torri 2009 emphasized the roles of social capital, community spirit, participatory and governance structure. Community entrepreneurs success of mobilizing resources to collective action was also emphasized by Selky & Smith (1994).

## OBJECTIVES OF THE STUDY

1. To identify how the social entrepreneurship approach can be used to establish sustainable enterprise within a group/community set up.
2. To evaluate how/why social entrepreneurship approach would be considered as a means of achieving sustainable Enterprises as compared to other Micro-enterprises.

## RESEARCH QUESTIONS

1. How does the Social Entrepreneurship work?
2. What is the relationship between the use of Social Entrepreneurship Approach and growth of sustainable enterprises?
3. What is the role of government in the efforts of encouraging the growth of Social Entrepreneurship?

## RELEVANCE OF THE STUDY

This study seeks to identify how Social entrepreneurship approach would assist in establishment of Sustainable Enterprises. It reviews the various social enterprises and how they have been able to grow, the findings will be useful in policy making as far as the social entrepreneurship is concerned.

## PROBLEM STATEMENT

Many intervention measures have been initiated by many, international development agencies despite of these efforts many of the projects/approaches fail to meet the objective of creation of poverty eradication through sustainable enterprises. Many at times the projects collapse soon after the donors leave, some of the reasons for such failures can be attributed to lack of ownership by the community. The target beneficiaries view the projects as being owned by the donors; such that once the donor exhausts the funds the local community loses interest in the project.

The coming up of micro finance institutions has also seen a greater access of finances granted to those groups that were initially marginalized in respect to access of funding. The Banks have also come up with different products for micro enterprises in an effort to ensure that all the upcoming entrepreneurs are reached.

In Kenya the government has identified the two groups' that is Women and Youth who have in the past been disadvantaged in terms of accessing loans due to lack of collateral, and two funds created to address their plight. The Youth enterprise fund was created as one of the flagships of Vision 2030 under the social pillars i.e to address the social needs of the youth through issue of loans to youth while the Women Enterprise Fund was also establish to issue loans to the women entrepreneurs. To date the youth fund has advanced loans worth 5.9 billion to 158,000 youth enterprises out of which 615 million has been advanced to 13,341 groups while 66 million to 2645 individual enterprises (Status Report 2007-12). The youth fund provides support services on creation of new business opportunities most of which are created to address the social needs e.g in Nairobi the fund put up car wash sites, public toilets and integrated bus shelters (Status Report 2007-12). The women enterprise fund one of the flagship projects under the social pillars in Kenya Vision 2030, the creation of the fund is a clear demonstration of the Kenya Governments commitment to the reduction of gender inequality and women empowerment. According to the Women Economic Agenda- Status report (2013) the fund has received Ksh. 2.6 billion since inception and has been able to create loans worth ksh.3.1 billion an indication of growth of the fund.

Despite of all the efforts it has been observed that most of the loans advanced to individual members are utilized for other activities and not entrepreneurial venture. While some of those members who venture into businesses do not survive for long. Kibas (2010) observed that lack of sufficient education and training is one of the impediments to the success of micro-enterprises in the rural Kenya. As stated earlier in this paper social enterprises are created with the needs of the community in mind, it also brings together the different skills of the members which is positively used to achieve the group objective of growth.

One major challenge that communities have is lack of innovation which has negatively impacted on the growth of the few entrepreneurs in terms of copying from one another instead of innovating new ideas, this has a negative impact on existing enterprises. While we do not have data on the average life span of social sector organizations, business organizations do appear to have negatively short lives, (Nicholls 2006). The life expectancy for smaller businesses is much lower, with one survey estimating that 12.5 years for all firms. This state of affairs creates what Schumpeter called creative destruction, a process that ensures that only those organizations creating value efficiency survive, where most of the social enterprises fall. Johannisson (1998) suggests that individuals retain their identity but act as a collective in which individuals work within their social networks creating new ventures. In collective entrepreneurship, the ability to build and exploit social resources builds a platform for offensive venturing as opposed to defensive venturing, Johannisson (1998).

Without doubt most people venture into business or self employment when formal employment opportunities fail to materialize. Research indicates that most of those who succeed in entrepreneurship are either trained on the kind of business they venture into or continue business training as they progress. Wanjubi (2006) noted that the success rate of new businesses is 15% in the first 5 years, this can be attributed to be due to the highly dynamic state of the business environment which require changing approaches to doing business which may be a challenge especially to individual entrepreneurs. Social enterprises are expected to address this by ensuring that the groups come together and improve on innovations identified by the members in order to ensure there are sustainable enterprises.

It is in the above background that this paper seeks to give a highlight on how Social entrepreneurship/Community driven enterprise can contribute establishment of sustainable enterprises.

## RESEARCH FINDINGS AND CONCLUSION

The key objective of establishment of social enterprises is to address the social need, this is one of the contributing factors to the success of the enterprises, such needs cuts across the community and this works positively for the enterprise by bringing together the society to ensuring that they support the venture. The community ensures the survival of such enterprises since it provides the market to the service provided and where a community enterprise is established the members provide professional backup for the existence of the enterprise. The varied professional background of the members ensures that the enterprise is able to grow in terms management and innovations.

As observed in the Grameen Bank Model the community where borrowers would monitor each other and check that each one of them pays back their loans timely and correctly, the same applies to any community enterprise as long as it is offering a service that the community finds it beneficial to all, therefore collective monitoring of one another will foster the success of the enterprise, hence a high possibility of sustainability of enterprise.

Social enterprises thrive in areas where there are gaps, these gaps bring the community to think and work together and come up with lasting solutions. In the efforts of providing lasting solutions then the social entrepreneur will work towards sustainability, this makes the members to be very innovative in their approach towards management of the enterprise. As noted in the Jamii Bora initiative where the firm first started as a micro-lending and is currently empowering its clients to own houses, social entrepreneurs in their efforts to bring change do not get satisfied on the success of one initiative but will always strive to bring more change. In the process an enterprise can be transformed to meet the changing needs hence sustainability achieved.

Social entrepreneurs are interested in bringing change in the community their success can be measured by the scalability of the idea; this can be achieved through replication of the idea without any fears of competition in the market. In the Grameen Bank venture the same model has been replicated widely and even currently the other commercial banks have borrowed from the model. Through replication and innovations as per the needs of the community, such enterprises are able to grow and sustain themselves.

Sustainability of the social enterprise depends on the ability to identify a social gap within the society, innovate within the identified gap and involve the community in the development of idea into an enterprise. Kick start uses innovation tied together with the community need to develop its technologies and these are packaged to suit the community needs. These are demand driven products which gain the support of the community both socially and financially through market provision which contributes to the building up of the financial base and sustainability of the enterprise.

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