

## **Service Quality Assessment of Food-Based Superstores**

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### **Abstract**

Retailing in India is receiving global recognition and attention, and this emerging market is witnessing a significant change in its growth and investment pattern. With greater choice and increasing awareness, Indian consumers are more demanding of quality service and retailers can no longer afford to neglect customer service issues. The present research was undertaken with the objectives to evaluate quality of service offered by selected food based superstores. The study was conducted by selecting eight food-based superstores on judgment basis and a sample of 25 customers was selected from each superstore i.e. total 200 customers were selected. Primary data was collected from these customers through structured, non disguised questionnaires. The Retail Service Quality Scale (RSQS) was used to collect data relating to various parameters of service quality assessment of retail store like physical aspects, reliability, personal interaction, problem solving and store policy. It was found that there was maximum gap for the parameter problem solving (-1.40) and least gap was found for the parameter physical aspects (-1.04). The overall gap was found negative for all parameters which indicate that the service quality of retail stores is not meeting the expectation of customers.

### **Key Words**

Service Quality, Expectation, Perception, Food-based Superstore.

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### **INTRODUCTION**

The retail environment is changing more rapidly than ever before. It is characterized by intense competition from both domestic and foreign companies, a spate of mergers and acquisitions, and more sophisticated and demanding customers who have greater expectations related to their consumption experiences.

Consequently, retailers today must differentiate themselves by meeting the needs of their customers better than the competition. It is not just the global players like Wal-Mart, Tesco and Metro group who are vying to capture a pie of this market but also the domestic corporate behemoths like Reliance, KK Modi, Aditya Birla group, and Bharti group too are at some stage of retail development. With greater choice and increasing awareness, Indian consumers are more demanding of quality service and retailers can no longer afford to neglect customer service issues. Service quality is perceived as a tool to increase value for the consumer, as a means of positioning in a competitive environment and to ensure consumer satisfaction retention and patronage.

### **FOOD RETAIL IN INDIA**

Retailing, one of the largest sectors in the global economy, is going through a transition phase in India. For a long time, the corner grocery store was the only choice available to the consumer, especially in the urban areas. This is slowly giving way to international formats of retailing. The traditional food and grocery segment has seen the emergence of supermarkets/grocery chains, convenience stores and fast-food chains. To be successful in food retailing in India essentially, means to draw away shoppers from the roadside hawkers and kirana stores to supermarkets. This transition can be achieved to some extent through pricing, so the success of a food retailer depends on how best he understands and squeezes his supply chain. Food and grocery retailing is a tough business in India with margins being very low, and consumers not dissatisfied with existing shops where they buy. For example, the next-door grocery shopkeeper is smart and delivers good customer service, though not value. Almost all food retail players have been region-specific as far as geographical presence is concerned in the country.

It can be observed that the most popular retail format in India is the 'supermarket', beside the corner shop/grocery store/'mom and pop' store. Hypermarkets have very recently come into being and are negligible in number though most retail chains do intend to expand their presence through this format as well. 'Discount chains' are also substantial in number and are growing at a fast pace through the country, predominantly in the southern region.

### **FOOD-BASED SUPERSTORES**

There are various retail formats followed by the retail chains These are: Department Stores, Specialty Stores, Discount Stores, Convenience Stores and

Food-Based Superstores. Food-Based Superstores are large, low cost, low margin, high volume, self-service operations designed to meet the needs for food, groceries and other non-food items. This format was at the forefront of the grocery revolution, and today, it controls more than 30% of the grocery market in many countries. The most widely used definition of superstore is a store with a selling area between 400sq m and 2500 sqm, selling at least 70% foodstuffs and everyday commodities, (Pradhan, 2008). Internationally, the size of these stores varies from 8000 to 20000 square feet. ASDA, Safeway, Kroger and Teso are some of the large international players. While there is no standardisation on the parameters of what makes a supermarket in India, it is one of the fastest growing business formats in the country. Examples of supermarkets in the Indian market scenario are Nilgiri's Foodworld, Subiksha, Food Bazaar and Vitan (Maurya, 2009).

### **SERVICE QUALITY**

Service quality is defined as the difference between perceptions and expectations on the items representing the areas of performance specific to a service. Service quality is a critical factor for service firms to position themselves strongly in a competitive environment. Gronroos (1984) discussed the 'technical quality of service encounters, that is, what is received by the customer, and the 'functional quality' of the process, that is, the way in which the services are delivered, in relation to staff. It was found that a customers' assessment of overall service quality depends on the gap between expectation and perception of actual performance levels, (Parsuraman, 1985). Bolton and Drew (1991) developed a model of how customers with prior experiences and expectations assess service performance levels, overall service quality and service values. It was later reported that behavioural consequences of service quality act as intervening variables between service qualities and financial gains or losses from retention or defection. Service quality is a determinant of whether a customer ultimately remains with or defects from accompany, (Zeithaml *et al.*, 1996).

Research studies focused on that part of retail service that involves direct interactivity between the store and the customer and suggested that the recent wave of superstores has ushered in a new paradigm of retail service, i.e., one with elevated emphasis on self-service principles, (Merrilees and Miller, 2001). Stewart (2003) addressed the issue of service design specifically that of designing the service encounter for improved quality. Arora and Vyas (2006) examined that today smart retailers can make affordable immediate changes: yet realize very meaningful incremental gains in effective store performance from the backroom of the store

operation. With a large number of malls in pipeline in India, one of the critical factors that will give an edge to one retailer center over the others is the way it is managed, (Zammer, 2006). Stuart (2007) suggested three things for running a retail store efficiently i.e., improving the product, improving the store and improving the service. Ladhari (2008) identified the key conceptual and empirical issues that should be considered in the development of alternative industry-specific measurement scales of service quality.

### **RETAIL SERVICE QUALITY SCALE (RSQS)**

The Retail Service Quality Scale (RSQS) is used to measure the service quality of a retail store. (Dhabolkar *et al.*, 1996). The scale has high construct reliability and validity in measuring service quality in department stores. These service quality dimensions and their sub dimensions are rated at 5 point scale for expectation and perception. The gap in service quality pertaining to specific areas is found out by finding the differences in perception and expectation.

The service quality is measured on the following parameters :

1. **Physical Aspects** : It has six sub-dimensions. It encompasses the appearance of the physical facilities and the convenience offered to the customer by the layout of the physical facilities.
2. **Reliability** : It has five sub-dimensions. Customers view reliability as a combination of keeping promises.
3. **Personal Interaction** : It has nine sub-dimensions. It evaluates whether store personnel are courteous, helpful, and inspire confidence in customers and capture how customer is treated by the employee.
4. **Problem Solving** : It has three sub-dimensions. It addresses the handling of returns and exchanges as well as of complaints.
5. **Policy** : It has five sub-dimensions. It captures aspects of service quality that are directly influenced by organization policy.

### **OBJECTIVES OF THE STUDY**

Given the increasing competition, retailers can no longer afford to neglect customer service issues. Consumers have become more selective in their choice of stores. Smaller stores provide more personal services but with inadequate stocks and facilities; a contrast to the larger retailers which are seen as offering better merchandise choice and public amenities but with standardized and non-personalized services. As superstores offer similar products in the store, improving service quality is seen as critical to ensure customer loyalty. Perception of high service quality and

high customer satisfaction generally leads to higher levels of purchase intentions and repeat buying. The present study was undertaken with the following specific objective :

***To evaluate quality of service offered by selected food based superstores in Ludhiana city.***

## RESEARCH METHODOLOGY

A research design was formulated which guided the collection and analysis of data. The population for the study consists of all the customers of food-based superstores in Ludhiana city. A sample size of 200 customers was selected on the basis of Quota sampling technique. In the first stage, 8 food-based superstores were selected on judgment basis. Those stores which qualified the definition of food-based superstores were selected for the study. Food-Based Superstores are large, low cost, low margin, high volume, self-service operations designed to meet the needs for food, groceries and other non food items, (Pradhan, 2008). Efforts were made to select each retail store from a different Company/Corporate Group. In the second stage, 25 customers from each store were selected on convenience basis.

The primary data was collected with the help of a structured, non-disguised questionnaire. An adopted Service Quality of Retail Store model given by Dabholkar, Thorpe and Rentz (Dhabolkar *et al.*, 1996) was used for the study. Data was collected relating to various parameters of service quality assessment of retail stores like physical aspects, reliability, personal interaction, problem solving and store policy on merchandise quality, parking, operation hours, credit cards etc. The Retail Service Quality Scale requires the respondent to rate the 28 items on scale from 1 to 5 twice. First to indicate their expectations and next to give their perception of the actual service provided. Further, the difference between the customers' expectation and perception of the service received gives the service quality gap.

The collected data was tabulated and analyzed using various statistical tools like percentage, mean scores, single mean z-test and two means z-test. Two means z-test was used to test the significance of difference between two population means at 5% level of significance. z-value was calculated by the following formula.

$$z = \frac{(\bar{X}_1 - \bar{X}_2)}{\sigma / \sqrt{n}}$$

Where,

$\bar{X}_1$  and  $\bar{X}_2$  denote the independent random sample means based on size  $n_1$  and  $n_2$  respectively.

$\sigma$  = standard deviation

**FINDINGS OF THE STUDY**

The findings of the study have been discussed below :

**Demographic Profile of the Respondents**

This section analyses the data collected from the respondents relating to demographic attributes i.e. age, gender, gross annual family income and occupation.

**Table 1**  
**Demographic Profile of Respondents**

Parameters	No. of Respondents	Percentage (%)
<b>Gender</b>		
Male	54	27
Female	146	73
<b>Total</b>	<b>200</b>	<b>100</b>
<b>Age (in yrs.)</b>		
<20	24	12
20-29	20	10
30-39	142	71
40-49	11	5.5
>49	3	1.5
<b>Total</b>	<b>200</b>	<b>100</b>
<b>Gross Annual Family Income (Rs. in Lacs)</b>		
<1	4	2
1-2	22	11
2-3	63	31.5
3-4	79	39.5
>4	32	16
<b>Total</b>	<b>200</b>	<b>100</b>
<b>Occupation</b>		
Student	18	9
Service	66	33
Businessmen	74	37
Professional	40	20
Retired	2	1
<b>Total</b>	<b>200</b>	<b>100</b>

Table 1 shows that 73% respondents were females and 27% were males and 71% respondents fall in the age group of 30-39 years. Further, 39.5% respondents have annual family income between 3-4 lacs and 31.5% have between 2-3 lacs. The table also shows that 37% respondents are from business family and 33% are from service family..

### Frequency of Visit of Respondents to Food-base Superstores

The respondents were asked how often they shopped at the food-based superstore.

Majority of the respondents i.e. 36% go for shopping once a fortnight to food-based superstores and 27% respondents go once a week and 20% respondents shop once a month. Only 9% respondents go more than once a week.

**Table 2**

#### Frequency of Visit of Respondents to Food-based Superstore

Frequency of Visit	No. of Respondent	Percentage
More than once a week	18	9
Once a week	54	27
Once a fortnight	72	36
Once a month	40	20
Less than once a month	16	8
Total	200	100

### Source of Information about Food-based Superstores

Respondents were asked about the source from where they came to know about food-based superstore.

**Table 3**

#### Source of Information about Food-based Superstores

Source of Information	No. of Respondent	Percentage
Print Advertisement (Newspaper/ Printed material)	74	37
Friends and Relatives	48	24
Hoardings	42	21
Broadcast advertising	36	18
<b>Total</b>	<b>200</b>	<b>100</b>

Table 3 shows that majority of respondents i.e. 37% receive the information about food-based superstore from print advertising, 24% replied that they come to know about the food-based superstore from their friends and relative and 21% got information from hoardings.

### **Factors Affecting Preference of Food-based Superstores**

To ascertain the attributes which are considered more important while choosing food-based superstore, the respondents were asked to indicate the attributes which they considered important while selecting superstore on a scale from 1 to 5 where 1 stands least important and 5 stands most important.

**Table 4**  
**Factors Affecting Preference for Food-based Superstore (N=200)**

<b>Factors</b>	<b>Mean score</b>	<b>Standard Deviation</b>	<b>z-value</b>
Convenient location	4.27	0.73	62.98*
Reasonable price	4.24	0.77	22.92*
More choices of product	4.10	0.90	17.35*
Visual merchandising	3.47	0.70	49.74*
Good store image	3.33	1.00	4.65*
Good store design	3.32	0.67	6.66*
Convenient parking	3.19	0.73	3.70*
Its privileges to the cardholder	2.33	0.66	14.37*

\*Significant at 5% level of significance (z table = 1.96)

It was found that the factors convenient location (4.27), reasonable price (4.24) and more choice of product (4.10) are found to affect the preference of food-based superstore while privilege to card holder (2.33) least affected preference of food-based superstore. Standard deviation for good store image was found to be the highest (1.00) and privilege to card holder was least (0.66). The z-values were calculated was tested at 5% significant level. For all the factors, z-values were found to be significant which means that all these factors significantly affect the preference of food-based superstores.

### **Expenditure on Each Shopping Experience**

Respondents were asked about their expenditure on each shopping experience.

**Table 5**  
**Frequency Distribution of Expenditure on each Shopping Experience**

Expenditure/ visit	No. of Respondent	Percentage
Less than Rs100	54	27
Rs100-Rs500	102	51
Rs500-Rs1000	28	14
More than Rs1000	16	8
<b>Total</b>	<b>200</b>	<b>100</b>

Table 5 shows that 59% of respondents spent within the range of Rs 100- Rs 500 and 27% respondents spent less than Rs 100 per visit. Only 8% respondent spent more than Rs 1000 per visit.

### **Service Quality Assessment of Superstores**

Service Quality of food-based superstores was assessed on five dimensions of service quality by using Retail Service Quality Scale (Dhabolkar *et al.*, 1996). The service quality is measured on five dimensions i.e. physical aspects, reliability, personal interaction problem solving and store policy. These five dimensions were further divided into sub dimensions as given below.

#### **Physical Aspects**

Physical aspects refer to the physical appearance of store and layout convenience. Physical environment is often used as cues of a firm's competences and quality by consumers before a purchase. Physical environment has a deep impact on customers' perception of service experiences.

The respondents were asked to rate their expectation and perception on scale of 1 to 5 where 1 stands for least important and 5 as most important.

**Table 6**  
**Service Quality Gap for the Physical Aspects (N=200)**

Statements Relating to the Dimension Physical Aspects	Actual Service Received (P) Mean Score	Expected Service (E) Mean Score	(P-E)	z-value
This store has modern-looking equipment and fixtures.	3.29	4.46	-1.17	14.63*
The physical facilities at this store are visually appealing.	3.3	4.42	-1.12	10.49*
Materials associated with this store's service are visually appealing (shopping bags, catalogs etc.)	3.28	4.31	-1.03	12.02*
This store has clean, attractive, and convenient public areas (rest rooms, fitting rooms)	3.44	4.34	-0.9	10.50*
The store layout at this store makes it easy for customers to find what they need	3.30	4.42	-1.12	14.17*
The store layout at this store makes it easy for customers to move around in the store	3.23	4.39	-1.16	14.05*
<b>Overall</b>	<b>3.31</b>	<b>4.35</b>	<b>-1.04</b>	

\*Significant at 5% level of significance (z table = 1.96)

From the Table 6 it is clear that the difference between the mean scores for expectations and that for actual experience is the least (-0.9) for the statement that store has clean, attractive, and convenient public areas. The greatest difference (-1.17) has come up for the statement that store has modern-looking equipment and fixtures. The overall mean score for difference from the parameter 'Physical Aspects' comes out to be -1.04. The negative sign shows that expectations are higher than perception. All the calculated z-values come out to be greater than z-value (1.96) at 5% significance level. So it can be said that there is a significant difference between expectations and actual experience.

### **Reliability**

The reliability dimension comprise of "promises" and "doing it right" sub-dimensions. Besides fulfilling promise and performing the right service as part of

reliability, the availability of merchandise is also added as part of the "doing it right" sub-dimension.

The respondents were asked to rate their expectation and perception on scale of 1 to 5 where 1 stands for least important and 5 as most important.

**Table 7**  
**Service Quality Gap for the Reliability (N=200)**

Statements Relating to the Dimension Reliability	Actual Service Received (P) Mean Score	Expected Service (E) Mean Score	(P-E)	z-value
When this store promises to do something by a certain time, it will do so	3.08	4.45	-1.37	18.39*
This store provides its services at the time it promises to do so	3.11	4.37	-1.26	20.00*
This store performs the services right the first time	3.06	4.34	-1.28	17.85*
This store has merchandise available when the customers want it	3.29	4.33	-1.04	14.32*
This store insists on error-free sales transactions and record	3.37	4.42	-1.05	-25.04*
<b>Overall</b>	<b>3.18</b>	<b>4.38</b>	<b>-1.20</b>	

\*Significant at 5% level of significance (z table = 1.96)

From Table 7 it is clear that the difference between the mean scores for expectations and that for actual experience is the least (-1.04) for merchandise availability. It means that customers get the merchandise when they want. The greatest difference (-1.37) has come up for the store promise to do something by a certain time. It shows that stores are not able to keep their promise to do something by certain time. The overall mean score for difference from the parameter 'Reliability' comes out to be -1.20. Negative sign shows that expectation is higher than perception for reliability. All the calculated z-values come out to be greater than the z-value (1.96) at 5% significance level. So it can be said that there is a significant difference between expectations and actual experience.

### Personal Interaction

Personal interaction means that store personnel are courteous, helpful, and inspire confidence in customers. Personal interaction was subdivided into 9 statements

which were rated on scale from 1 to 5 for expectation and perception.

The respondents were asked to rate their expectation and perception on scale of 1 to 5 where 1 stands for least important and 5 as most important.

**Table 8**

**Service Quality Gap for Personal Interaction (N=200)**

Statements Relating to the Dimension Personal Interaction	Actual Service Received (P) Mean Score	Expected Service (E) Mean Score	(P-E)	z-value
Employees in this store have the knowledge to answer customers' questions	3.23	4.30	-1.07	14.16*
The behaviour of the employees in this store instills confidence in customers	3.19	4.12	-0.93	11.78*
Customers feel safe in their transactions with this store	3.11	4.35	-1.24	16.67*
Employees in this store give prompt service to customers	3.19	4.37	-1.18	17.39*
Employees in this store tell customers exactly when service will be performed	3.20	4.38	-1.18	16.80*
Employees in this store are never too busy to respond to customer's requests	3.12	4.45	-1.33	19.75*
This store gives customers individual attention	3.06	4.32	-1.26	16.74*
Employees in this store are consistently courteous with customers	3.10	4.35	-1.25	17.79*
Employees in this store treat customers courteously on the telephone	3.09	4.28	-1.19	16.73*
<b>Overall</b>	<b>3.14</b>	<b>4.32</b>	<b>-1.18</b>	

\*Significant at 5% level of significance (z table = 1.96)

From Table 8 it is clear that the difference between the mean scores for expectations and that for actual experience is the least (-0.93) for the statement that the behaviour of the employees in this store instils confidence in customers. The greatest difference (-1.33) has come up for the statement that the employees in store are never too busy to respond to customer's requests. The overall mean score for difference from the parameter 'Personal Interaction' comes out to be -1.18. All the

calculated z-values come out to be greater than the z-value (1.96) at 5% significance level. So it can be said that there is a significant difference between expectations and actual experience.

### Problem Solving

Problem solving incorporates store's willingness to handle returns and exchanges, shows a sincere interest in solving customers' problems, and also store personnel's ability to handle customer complaints directly and immediately.

The respondents were asked to rate their expectation and perception on scale of 1 to 5 where 1 stands for least important and 5 as most important.

**Table 7**

**Service Quality Gap for Problem Solving (N = 200)**

Statements Relating to the Dimension Problem Solving	Actual Service Received (P) Mean Score	Expected Service (E) Mean Score	(P-E)	z-value
This store willingly handles returns and exchanges	2.74	4.41	-1.67	24.31*
When a customer has a problem, this store shows a sincere interest in solving it	3.09	4.36	-1.27	17.32*
Employees in this store are able to handle customer complaints directly & immediately	3.10	4.34	-1.24	18.02*
<b>Overall</b>	<b>2.97</b>	<b>4.37</b>	<b>-1.40</b>	

\*Significant at 5% level of significance (z table = 1.96)

From Table 9 it is clear that the difference between the mean scores for expectations and that for actual experience is quite high for all the statements. The least difference (-1.24) is for the statement that employees of store are able to handle customer complaints directly & immediately. The greatest difference (-1.67) has come up for the statement that store willingly handles returns and exchanges. The overall mean score for difference from the dimension 'Problem solving' comes out to be -1.40 which is very high on a scale of 5. All the calculated z-values come out to be greater than the table z-value (1.96) at 5% significance level. So it can be said that there is a significant difference between expectations and actual experience.

### Store Policy

Store policy includes high quality merchandise, parking facilities, convenient operating hours, acceptance of major credit cards, and store's own credit card.

The respondents were asked to rate their expectation and perception on scale of 1 to 5 where 1 stands for least important and 5 as most important.

**Table 10**  
**Service Quality Gap for Store Policy (N=200)**

Statements Relating to the Dimension Store Policy	Actual Service Received (P) Mean Score	Expected Service (E) Mean Score	(P-E)	z-value
This store offers high quality merchandise	3.36	4.49	-1.13	16.11*
This store provides plenty of convenient parking for customers	3.19	4.43	-1.24	16.12*
This store has operating hours convenient to all their customers	3.31	4.47	-1.16	16.19*
This store accepts most major credit cards	3.18	3.84	-0.66	7.90*
This store offers its own credit card	1.70	3.67	-1.97	27.03*
<b>Overall</b>	<b>2.94</b>	<b>4.18</b>	<b>-1.24</b>	

\*Significant at 5% level of significance (z table = 1.96)

From Table 10 it is clear that the difference between the mean scores for expectations and that for actual experience is the least (-0.66) for the statement that store accepts most major credit cards. The greatest difference (-1.97) has come up for the statement that store offers its own credit card. The overall mean score for difference from the dimension 'Store Policy' comes out to be -1.24, which is high on a scale of 5. All the calculated z-values come out to be greater than the table z-value (1.96) at 5% significance level. So it can be said that there is a significant difference between expectations and actual experience.

### Overall Service Quality Assessment of Food-based Superstores

Overall assessment of service quality was calculated by calculating the gap between expectations and perceptions of five dimensions of service quality i.e. physical aspects, reliability, personal interaction, problem solving and store policy.

The respondents were asked to rate their expectation and perception on scale of 1 to 5 where 1 stands for least important and 5 as most important.

**Table 11**

**Overall Assessment of Service Quality of Food-based Superstores (N=200)**

Dimensions	Actual Service Received (P) Mean Score	Expected Service (E) Mean Score	RSQS Score (P-E)	Rank
Physical aspects	3.31	4.35	-1.04	V
Reliability	3.18	4.38	-1.20	III
Personal interaction	3.14	4.32	-1.18	IV
Problem solving	2.97	4.37	-1.40	I
Store policy	2.94	4.18	-1.24	II

The overall gap for each dimension comes out to be negative which shows that expectation for each service dimension is higher than perception. Mean analysis is done which shows that maximum gap between perception and expectation is (-1.40) for problem solving while least gap was (-1.04) for physical aspects. This shows that the stores must concentrate on reducing the gap between expectation and perception in the dimension problem solving, store policy and personal interaction. Comparing the perceived performance and expectation level reveals that the perceived performance on all dimensions fell short of their expectations. This indicates that the service quality offered did not meet their customers' expectations on all aspects.

## CONCLUSION

There is a boom in the retail industry. A number of retail stores are coming up in all major cities. It is one of the largest sectors in the global economy and is going through a transition phase in India. Today customers have become very intelligent and he is not ready to compromise on quality. Therefore, quality service has become a source of competitive advantage and increasingly important weapon in business survival. Thus, it is important to assess the service quality of retail stores. The study revealed that the service quality offered did not meet the customers' expectations on most aspects. The maximum gap between perception and expectation was (-1.39) for problem solving while least gap was (-1.04) for physical aspects. So there is need for improving service quality by concentrating on reducing the gap between expectation and perception in the dimensions- problem solving, store policy and personal interaction.

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## **Relationship Between Perceived Organizational Support and Organizational Role Stress : A Study of Doctors**

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### **Abstract**

This paper aims to investigate the relationship between perceived organizational support (POS) and organizational role stress (ORS) among doctors. One hundred and forty doctors were surveyed using an instrument comprising the 50 items Udai pareek's organizational role stress scale and the 17-items version of the Survey of perceived organizational support (POS) by Eisenberger. Significant relationships were found between perceived organizational support and each of the ten dimensions of organizational role stress. The findings of this study contribute to the existing academic literature and provide hospital administrators with a better understanding of the factors that contribute to the problem of doctors' turnover and their efficiency at work.

### **Key Words**

Perceived organizational support, Organizational role stress

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### **INTRODUCTION**

Medical profession is one of the most stressful professions. Doctors are on a 24 hour duty with no scope for even minor mistakes. Thus, it becomes essential to make all efforts to keep the doctors away from stress. Work-related stress in employees is believed to result in physiological, psychological and behavioural consequences which are detrimental to the health of the employee and the effectiveness and efficiency of the organization. On the other hand, a high level of perceived organizational support (POS) has been associated with many positive implications for both employees and management, such as increased

organizational commitment, job satisfaction and reduced turnover rates (Eisenberger *et al.*, 1997).

## REVIEW OF LITERATURE

Perceived organizational support is defined as "the extent to which employees perceive that their contributions are valued by their organization and that the firm cares about their well-being" (Eisenberger *et al.*, 1986). Eisenberger and colleagues developed the concept of perceived organizational support, is an attempt to represent the employment relationship described by social exchange theory (Blau, 1964). Social exchange suggests that positive perceptions about the employment relationship will lead to beneficial work behaviors through the process of obligatory reciprocation.

Perceived organizational support (POS) is positively related to affective commitment because it fulfills the socio-emotional needs of employees including respect, caring and approval and thus it leads to stronger affiliation and belonging to the organization. Other researchers have also found that perceived organizational support leads to higher level of motivation and commitment towards the organization. Perceived organizational support influence employees' general affective reactions to their job, including job satisfaction and positive mood. Perceived organizational support contributes to overall job satisfaction by meeting socio-emotional needs, increasing performance-reward expectancies, and signaling the availability of aid when needed. Perceived organizational support influence work related behaviours and job involvement.

Research suggests that a common flaw in hospitals is that they fail to address the issues associated with doctors' wellbeing, such as the experience of work-related stress, burnout and the extent to which the doctors feel they are supported and valued. (Tabacchi *et al.*, 1990; Zohar, 1994). Zohar (1994) identified role conflict, role ambiguity, work overload and lack of control; commonly known as lack of decision latitude or autonomy as sources of job-related stress.

Stress among employees is associated with reduction in productivity, absenteeism, low organizational commitment and high turnover, and these costs are directly linked to reduced organizational effectiveness and financial loss (Lingard, 2003; Reynolds and Tabacchi, 1993; Vallen, 1993). Role conflict and role ambiguity are commonly regarded as role stressors. The experience of role conflict is common among doctors as they attempt to balance often conflicting demands from patients and hospital management. On the other hand, role ambiguity arises when doctors are not sure of management expectations and the reduced accessibility of management during busy periods may pose a problem for doctors seeking

clarification of their delegated roles or tasks. This may result in employees' negatively evaluating their abilities, leading to feelings of reduced personal efficacy (Deery and Shaw, 1998).

Another important source of job related stress found among doctors is work overload. Referred to as a work characteristic stressor, work overload may occur as doctors try to meet the demands of the patients and management for speed and quality of service. Since patient's satisfaction depends on the delivery of service in 'real time', the doctors are required to perform a highly demanding integrative function under tight time constraints. Doctors are likely to have fewer opportunities, than those working in more regular hours, to socialise and bond with their co-workers due to the long and busy working hours and staggered shift times that result in the doctors arriving and leaving the workplace at different times.

The regular occurrence of these role stressors that prevent employees from meeting organizational expectations can evoke a variety of outcomes commonly recognised as symptoms of role strain. These include low job satisfaction, absenteeism, lower organizational commitment, poorer job performance, negative attitude towards work, tension and anxiety (Zohar, 1994).

According to organizational support theory, the development of perceived organizational support (POS) is based on the employees' tendency to view their favourable or unfavourable treatment as an indication that the organization favours or disfavors them (Rhoades and Eisenberger, 2002). Employees are said to develop global beliefs regarding the extent to which their organization values their contributions and genuinely cares about their wellbeing (Eisenberger *et al.*, 1997).

The concept of perceived organizational support is based on a social exchange interpretation of organizational commitment, whereby employees extend their effort and loyalties to the organization in return for the material commodities and social rewards it can bestow'. Perceived organizational support theory has been found to be related to, yet distinct from, both Leader-Member exchange and supervisor support (Rhoades and Eisenberger, 2002). However, while the latter two constructs describe the relationship between subordinates and individual supervisors, acting as agents of the organization, the concept of perceived organizational support describes the relationship that an employee has with their organization as a whole. Thus, the employees view their organization's favourable or less favourable treatment towards them, not through the actions of their immediate superiors, but through the human-like characteristics assigned to the policies, norms and culture of the organization. Eisenberger *et al.*, (1986) identified four general forms of perceived favourable treatment that contribute to employees perceived organizational support. These include fairness, supervisor support,

organizational rewards and job conditions.

Both employee and employer can benefit from high levels of perceived organizational support. Employees experience positive outcomes - such as a decrease in job-related stress, an increase in positive job-related affect, high levels of job involvement, reduced withdrawal behaviour, increased organizational commitment and a desire to remain with the organization (Eisenberger *et al.*, 1986). This results in positive organizational outcomes such as reduced turnover, increased affective commitment and higher productivity and performance (Eisenberger *et al.*, 2001).

Doctors have little input into the operating procedures and decision-making processes that regulate their service environment. Furthermore, while a hospital's organization management places a strong emphasis on patient care, it has been recognized that the environment in which the doctors work can often inhibit their ability to provide a truly satisfying service (Vallen, 1993). Faulkner and Patiar (1997) identified dealing with ambiguous situations as one of the most common sources of stress. Ross and Boles (1994) suggested that supervisory and managerial support reduces job-related strains such as role conflict and role ambiguity. This claim is supported by a number of findings that suggest supervisory and leadership behaviours actually increase role clarity (Hampton *et al.*, 1986; Johnson *et al.*, 1989). Extrinsic factors such as organizational support, supervisor relations and immediate work environment all contribute to an employee's level of job satisfaction and can result in a positive attitude toward the organization. Doctor's turnover is recognized problem within the hospitals. This notion, along with the previous finding that doctors are more likely to experience lower levels of job satisfaction (Reichel and Pizam, 1984), suggests that doctors may be more likely to experience stress-related symptoms and more prone to having negative perceptions of the extent to which their organization supports them.

Medicine is recognized as one of the most stressful professions. Although previous research has addressed the occurrence of work-related stress in the medical profession, past research efforts have predominantly focused on nurses and general practitioners as opposed to hospital doctors. Furthermore, research to date has not investigated the relationship between stress and perceived organizational support within a medical setting.

## **OBJECTIVES**

- To study the level of perceived organizational support and organizational role stress among doctors.

- To examine the impact of perceived organizational support on organizational role stress among doctors.
- To find the correlation between perceived organizational support and sub dimensions of organizational role stress among doctors.
- To compare organizational role stress using psycho-demographic variables i.e. gender and marital status among doctors.

### **HYPOTHESES**

To test the validity and applicability of given objectives and to gain an insight into the job behaviour of doctors involved in the study following hypothesis have been developed.

- H<sub>1a</sub>** There is high level of perceived organizational support and organizational role stress among doctors.
- H<sub>2a</sub>** Perceived organizational support has negative and significant impact on the organizational role stress among doctors.
- H<sub>3a</sub>** Perceived organizational support has significant correlation with all sub-dimensions of organizational role stress among doctors.
- H<sub>4a</sub>** There exists a significant relationship of psycho-demographic variables i.e. gender and marital status with organizational role stress among doctors.

### **METHODOLOGY AND RESEARCH DESIGN**

The study is descriptive cum empirical in nature. The present study is confined to cover two dimensions i.e. perceived organizational support and its impact on organizational role stress. In order to conduct the study doctors from a leading hospital in Chandigarh were taken as sample on random basis. Out of total of 140 respondents :

- 112 are males and 28 are females.
- 42 are married and 98 are unmarried.

### **TOOLS USED**

The Questionnaire prepared for the doctors started with information relating to demographic profile of the respondents i.e. gender and marital status. Followed by two parts i.e. Part - I comprising of a standardized questionnaire relating to perceived organizational support and Part -II carried the standardized questions to measure the level of organizational role stress.

### **PERCEIVED ORGANIZATIONAL SUPPORT (POS) QUESTIONNAIRE (Eisenberger *et al.* (1986))**

To measure perceived organizational support standardized questionnaire developed by Eisenberger *et al.*, (1986) was taken. The measure includes 17 items that measure an employee's perceptions of the degree to which the organization values the worker's contributions and items about actions that the organization might take that would affect the well being of the employee.

### **ORGANIZATIONAL ROLE STRESS SCALE (Udai Pareek)**

The scale was developed by Udai Pareek. The purpose of this scale is to assess the degree of stress arising from various aspects of the job. This scale contains 50 items which are rated on five point scale ranging from strongly agree to strongly disagree. Organizational role stressors consisted of ten dimensions, namely :

- (i) Inter-role Distance (IRD) - The conflict arises when an individual occupies more than one role.
- (ii) Role Stagnation (RS) - Feeling of being stagnated in the same role.
- (iii) Role Expectation Conflict (REC) - It arises due to conflicting expectations or demands by different role senders.
- (iv) Role Erosion (RE) - When credit for tasks performed in one's role is given to others or when some tasks belonging to one's role are performed by others.
- (v) Role Overload (RO) - When the role occupant feels that his/her role expectations are too many or too high.
- (vi) Role Isolation (RI) - When there is incompatibility of one's role with other employee's roles in the organization.
- (vii) Personal Inadequacy (PI) - A feeling of insufficient knowledge, skills or training to undertake a role effectively.
- (viii) Self-role Distance (SRD) - It arises out of the conflict between self-concept about the role and the expectations from the role, as perceived by the role occupant.
- (ix) Role Ambiguity (RA) - Lack of clarity about the various expectations that an employee has from his/her role.
- (x) Resource Inadequacy (RI<sub>n</sub>) - It arises when the resources required by the role occupant for performing the role effectively are unavailable.

## RELIABILITY AND VALIDITY ANALYSIS

Reliability can be defined to the extent to which a variable is consistent in what it is intended to measure. Since standardized questionnaires were modified to suit the present study reliability analysis was conducted. In the present research, the reliability of questionnaires was determined by using Cronbach's Coefficient alpha as shown in Table 1.

**Table 1**  
**Reliability Coefficients**

	<b>Perceived Organizational Support</b>	<b>Organizational Role Stress</b>
Number of items	17	50
Cronbach Alpha ( $\alpha$ )	0.830	0.953

The reliability coefficient indicated that the scale for measuring perceived organizational support is quite reliable as the alpha value is 0.838. For the purpose of measuring organizational role stress the reliability coefficient is 0.953. An alpha value of 0.60 and 0.70 or above is considered to be the criterion for demonstrating internal consistency of new scales and established scales respectively. As the value exceeded the minimum requirement, it is thereby demonstrated that the measures are reliable. 'Validity' represents the extent to which a measure correctly represents the concept of study. As standardized questionnaires were used for the purpose of collecting data validity testing has already been performed by the respective authors.

## ANALYSIS OF DATA

To arrive at pertinent analysis, the collected data was put to statistical analysis using SPSS package. The tools, which were employed to test the drafted hypothesis for analysis included: Analysis of Variance (ANOVA), Regression, Descriptive and Correlation Analysis. After scoring the questionnaire the data was tabulated for each variable being studied separately.

The Kolmogorov-Smirnov test (K-S) and Shapiro-Wilk (S-W) test designed to test normality by comparing the data to a normal distribution with the same mean and standard deviation of the sample. If the test is NOT significant, then the data are normal. In the present research, both tests indicate that data are normal. Hence, tests like ANOVA can be applied to the data.

## HYPOTHESIS TESTING

### **H<sub>1a</sub> There is high level of Perceived organizational support and Organizational role stress among doctors.**

Means of both perceived organizational support (POS) and organizational role stress (ORS) are above the scale mean (3). The level of perceived organizational support among doctors is moderately high with a mean of 3.44. This shows that doctors perceive that the hospital they are employed in supports them as shown in Table 2.

The sub-dimensions of organizational role stress score around the scale mean with four of them i.e. inter-role distance, role expectation conflict, role overload and role isolation being slightly above the scale mean and rest six dimensions i.e. role stagnation, role erosion, personal inadequacy, self role distance, role ambiguity and resource inadequacy being slightly below the scale mean. Therefore, we fail to reject hypothesis (H<sub>1a</sub>).

**Table 2**  
**Descriptive Statistics**

	<b>N</b>	<b>Mean</b>
Perceived Organizational Support (POS)	140	3.4441
Organizational Role Stress (ORS)	140	3.0037
Inter-role Distance (IRD)	140	3.2829
Role Stagnation (RS)	140	2.9800
Role Expectation Conflict (REC)	140	3.0843
Role Erosion (RE)	140	2.9671
Role Overload (RO)	140	3.0771
Role Isolation (RI)	140	3.0243
Personal Inadequacy (PI)	140	2.8757
Self-role Distance (SRD)	140	2.9143
Role Ambiguity (RA)	140	2.8583
Resource Inadequacy (RIn)	140	2.9829

### **H<sub>2a</sub> Perceived organizational support has negative and significant impact on the organizational role stress among doctors.**

The Karl Pearson's Correlation was employed to see the interrelationship between perceived organizational support (POS) and organizational role stress (ORS)

(Table 3) and regression was applied to find the impact of perceived organizational support on organizational role stress (Table-4, 4.1 and 4.2).

The results show a negative and highly significant (-.566) relationship between perceived organizational support (POS) and organizational role stress (ORS). Doctors with high level of perceived organizational support exhibit lower level of stress.

**Table 3**  
**Correlations Between Perceived Organizational Support and Organizational Role Stress**

	Perceived Organizational Support	Organizational Role Stress
<b>Perceived Organizational Support</b>		
Pearson Correlation	1	-.566**
Sig. (2-tailed)		.000
N	140	140

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

**Table 4**  
**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.566 <sup>a</sup>	.320	.315	.45140

a. Predictors : (Constant), POS\_mean

**Table 4.1**  
**ANOVA<sup>b</sup>**

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	13.235	1	13.235	64.955	.000a
Residual	28.119	138	.204		
Total	41.354	139			

a. Predictors : (Constant), POS\_mean

b. Dependent Variable : ORS\_mean

**Table 4.2**  
**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	5.175	.272		19.019	.000
POS_mean	-.630	.078	-.566	-8.059	.000

a. Dependent Variable : ORS\_mean

Linear regression was used in order to test the impact of perceived organizational support on organizational role stress. The results show the thirty one percent of the variance in organizational role stress is caused by perceived organizational support. Perceived organizational support has significant impact on organizational role stress as the significance value is below 0.05. Thus, the hypothesis ( $H_{2a}$ ) is not rejected or may be accepted.

**$H_{3a}$  Perceived organizational support has significant correlation with all sub-dimensions of organizational role stress among doctors.**

**Table 5**  
**Correlation Between Perceived Organizational Support and Sub-Dimensions of Organizational Role Stress**

	POS	IRD	RS	REC	RE	RO	RI	PI	SRD	RA	Rln
<b>Perceived Organizational Support</b>											
Pearson Correlation	1	-.339**	-.517**	-.555**	-.452**	-.369**	-.465**	-.454**	-.376**	-.518**	-.516**
Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
N	140	140	140	140	140	140	140	140	140	140	140

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

The result of Karl Pearsons Correlation (Table 5) suggested that perceived organizational support (POS) has a negative and highly significant relationship with all ten sub-dimensions of organizational role stress i.e. inter-role distance, role stagnation, role expectation conflict, role erosion, role overload, role isolation, personal inadequacy, self-role distance, role ambiguity and role inadequacy. Therefore, the hypothesis ( $H_{3a}$ ) is not rejected or may be accepted.

**H<sub>4</sub>** There exists a significant relationship of psycho-demographic variables i.e. gender and marital status with Organizational Role Stress of doctors.

**Table 6**  
Correlations Between Organizational Role Stress and Psycho-demographic Variables

	Organizational Role Stress	Marital Status	Gender
<b>Perceived Organizational Support</b>			
Pearson Correlation	1	-.144	.139
Sig. (2-tailed)		.089	.103
N	140	140	140

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

The result of Pearson Correlation (Table 6) suggested that there is positive correlation between Gender and ORS ( $r = .139$ ). Therefore, the hypothesis ( $H_{4a}$ ) is not rejected or may be accepted. The result of pearson correlation (Table 6) suggested that there is negative correlation between Marital Status and ORS ( $r = -.144$ ). Therefore, the hypothesis ( $H_{4a}$ ) is rejected.

**Table 7**  
ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Marital Status	Between Groups		1	.859	2.926	.089
	Within Groups	40.496	138	.293		
	Total	41.354	139			
Gender	Between Groups	.794	1	.794	2.700	.103
	Within Groups	40.561	138	.294		
	Total	41.354	139			

The results of One-way ANOVA (Table 7) suggested that organizational role stress does not differ significantly among various groups based on the psycho-demographic factors (Marital Status and Gender) taken in the study, getting p-value more than .05 (p equals .089 and .103 respectively). Therefore, we fail to accept  $H_{4a}$ .

## SUMMARY OF RESULTS

Following points summarize the results of the study :

- The level of both perceived organizational support (POS) and organizational role stress (ORS) is moderately high among doctors, both being above scale mean 3.
- Perceived organizational support was negatively and highly correlated with organizational role stress. With regards sub-dimensions of organizational role stress, perceived organizational support had significant negative correlation with all ten sub-dimensions of organizational role stress.
- Organizational role stress showed negative relationship with marital status. However, organizational role stress showed positive relationship with gender.

## DISCUSSION

The findings are consistent with previous findings that high levels of perceived organizational support can counteract negative consequences associated with job-related strains that may lead to feelings of reduced personal efficacy (Zohar, 1994). In addition, Ross and Boles (1994) research found that adequate supervisor and managerial support can reduce the occurrence of ambiguous situations and increase the role clarity. Rhoades and Eisenberger (2002) also found that perceived organizational support was positively correlated with having 'a positive mood' at work and this implies reduced work-related cynicism among employees. Further support for this relationship was provided by Armeli *et al.*, (1998) who found high levels of perceived organizational support to be a significant contributor to a positive disposition toward work.

Doctors have little input into the operating procedures and decision-making processes that regulate their service environment. Furthermore, while a hospital's organization management places a strong emphasis on patient care, it has been recognised that the environment in which the doctors work can often inhibit their ability to provide a truly satisfying service (Vallen, 1993). In addition, employees' perception of their work environment or climate has a substantial influence on the quality of service.

Work-related stress has been linked to reduced productivity, absenteeism, low organizational commitment and high staff turnover and all of these contribute to reduced service and financial loss for the employer organization (Lingard, 2003). Thus, organization should be alert for behavioural symptoms related to stress such

as reduced enthusiasm, high absenteeism, tardiness, and decreased productivity. Research indicates that POS is one of the factors that contribute to work-related stress. Thus, identification of stress-related behaviours may indicate a need for administrators to implement strategies to reassure employees of the organization's commitment toward them. To enhance employee levels of perceived organizational support, organization needs to ensure that programs are in place that offer encouragement and reward good performance. These might include employee of the month programs, letters of commendation and internal promotional opportunities (Rowley and Purcell, 2001). Since supervisor support has been shown to be important in determining perceived organizational support, organizations should also ensure that their higher administrative supervisors are seen to be approachable, empathetic and available to address any work related grievances that the doctors may have.

Perceived organizational support has an impact on both employee attitude and behaviour towards the organization. While employee attitude in the form of organizational commitment will help in retaining best talent in the organization, a positive behavior in the form of reduced work stress would help in improving employee efficiency and productivity at work.

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## **Attitudes Towards Television Advertising : A Measure for Urban-Rural Children**

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### **Abstract**

This study mainly seeks to identify the children's attitude towards television advertisements among urban and rural children in India. A survey of 960 urban and rural children (476 urban and 484 rural children) aged 6 to 14 years in three urban cities, Ludhiana, Moga and Barnala (selected as per population) and in the rural areas of three provinces, Sidhwan Bet, Nihal Singhwala and Barnal Block was conducted in May 2011 to Jan, 2012. Questionnaires were distributed through 6 urban and 6 rural elementary schools and data was collected by researchers themselves along with the trained children psychologists. Result of the factor analysis identified into five factors based on construct of attitudes towards TV Advertising; Enjoyment; Credence; Product Information; Irritative and Persuasion. The dimensionality of these factors exhibits almost similar patterns across children of both domicile. Children from both areas have a positive attitude towards television advertisement considering them as important source of product and brand information. Rural counterparts reported that television advertisements create materialistic values in them and persuade them for buying products. Overall, children exhibit an optimistic attitude towards television advertisements. The positive children attitude towards advertising suggests that advertiser be sensitive to tactics that generate children scepticism towards advertisements. The implications of the findings for future theoretical and empirical developments of research in this field are also discussed.

### **Key Words**

Attitudes, Advertising, Children, Television, India

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## INTRODUCTION

Attitude towards advertising has been defined as a learned predisposition to respond in a consistently favorable or unfavorable manner towards advertising in general and are the major determinants of brand attitudes and purchase intentions. Gaining an understanding of the children attitude toward TV commercials is important to marketers for two reasons. First, children especially in the age group 6-14 are believed to be capable of developing psychological constructs, making comparisons and forming impression. Secondly, marketers are discovering that it is a segment with immense marketing potentials. Compared to their predecessors they are more affluent and have more choices. Children opinion towards advertising in general is of utmost importance to both practitioners and those responsible for advertising control. Advertisements featuring products like snacks, toys, confectionaries, cookies and fast foods are specifically designed targeting children, in order to motivate them to try new brands and purchase more. Marketers all over the world are still struggling to find ways and means to evaluate the impact of their advertisements on children. Several studies have shown that children's attitude towards commercials is an important predictor of their attitude towards the advertised products and brands (Atkin, 1977; Batra & Ray, 1986; Moore & Lutz, 2000; Phelps & Hoy, 1996). Cognitive development researches have established that children develop the understanding of persuasive intent of the television advertisement before they attain the age of eight (Donohue *et al.*, 1980; Wartella, 1982). Communication Researchers (Roedder 1999; Valkenburg & Cantor 2001) have consistently tried to answer two principal questions pertaining to children's attitudes towards TV advertising; (a) at what age they are able to make discrimination between program and commercial; (b) recognition of persuasive intent; when children begin to apply a degree of skepticism to their understanding of advertising claims and appeals. Children's susceptibility is largely determined by two types of intervening processes : (a) their cognitions about advertising in general, often referred to as cognitive defenses (Brucks *et al.*, 1988; Gunter & Fumham, 1998; John, 1999), and (b) their effective responses to commercials in particular (Derbaix & Bree, 1997; Moore & Lutz, 2000; Van Raaij, 1986). Cognitive advertising defenses include children's knowledge of the advertisers' persuasive intent and skepticism towards commercials. Information processing theories suggest that children in early childhood are not capable of using sophisticated information storage and retrieval strategies to process advertising (Roedder, 1981). By the age of 7 or 8, most children are able to distinguish commercials from television programs and have at least a basic understanding of their persuasive intent (Bijmolt *et al.*,

1998; Ward, Wackman & Wartella, 1977). However, the information-processing researches suggest that they, need to be promoted or cued to apply this knowledge until they are about 12.

Affective responses to commercials include children attitude towards television commercials as a predictor of their attitude towards brand as well as their predictor of request for advertised product (Galst & White, 1976; Wiman, 1983). Hence, it is imperative for the marketers to develop insights into the child's comprehension process, their understanding of the content and intent of the advertisements and accordingly develop their advertising campaigns. The starting definition of attitude towards TV advertising was adapted from the Eagly and Chaiken (1993) definition of the concept of attitude, "Attitude towards TV advertising is a psychological tendency that is expressed by evaluating TV Advertising with some degree of favor or disfavor." Advertising can enable a child to relate knowledge already assimilated to new information, make inferences beyond the facts presented, and draw conclusions based on these identified relationships. Despite the developmental nature of understanding advertising relatively little attention has been given to the measurement of children's attitudes towards TV advertising. Thus, the primary goal of the present study which is exploratory as well as descriptive in nature was to investigate the children attitude towards TV advertising as it will aid the marketers to understand the factors that have an impact on the formation of their attitude towards the preferred brands as it affects their purchase decisions.

## **LITERATURE REVIEW**

The concept of attitude, such as children's attitude towards advertising, is widely studied phenomena in child consumer research. Rossitier (1979) developed the standard measurement for children's attitudes towards television advertising, which has proved very useful for related researches over the years. The scale consists of 7 items on a four-point Likert scale and has been used with 9 to 12 years-old children. The scale measures a single dimension and interrelationship between seven items was found to be low. Out of seven items, three items describe the credibility dimension, two items the likeability of commercials and the last two the persuasive power of TV advertising. Rossiter (1979) himself examines three categories of specific effects of TV advertising on children : (1) Cognitive effects, focusing on children 's ability to understand commercials, (2) attitudinal effects, focusing on children's feeling towards TV advertising; and (3) behavioral effects, focusing on the extent to which children are persuaded to desire and ask for advertised products. Rossitier's publication can be considered a pioneering work

in the development of a scale measuring children's attitude towards TV advertising. Riecken and Samli (1981) applied Rossiter's scale to three product classes (cereals, toys and medicines). The reliability obtained for the scales applied to the specific products were relatively high (from .69 to .76), but the alpha obtained for the scale assessing attitude towards TV advertising in general was rather low (.60). The Derbaix and Pecheux (2003) scale to assess the 8 to 12 years old children attitude towards TV advertising consist of 7-items. Children responses were taken on four-point Likert scale. Confirmatory factor analyses displayed two main factors: the first (five items) referring to the entertainment dimension of TV advertising and the second (two items) to credibility towards television advertisement in general. The weakness of this scale was that 'credibility dimension' consisting of two items only and the absence of a dimension concerning the effect of advertising on behaviour, which is, in our opinion, a relevant element of attitude towards TV advertising. M. D'Alessio *et al.*, (2009) developed a new scale consisting of 12 items measuring the children attitude towards TV advertisements. The internal consistency was relatively high for the three subscales (range .70 to .74). Three factors were extracted from scree plots and five items were covered under enjoyment dimension; four items under credence and three items by behavioral dimension. The weakness of all these scales according to researcher was that it does not contain any items to predict the information and social role dimensions. Apart from these researches focusing children and teens, extensive research has been carried out to measure attitude towards advertisements with different population groups, such as executives (Greyser and Reccc 1971), subscribers to Consumer Reports (Anderson, Engle dow, and Becker 1978), and students (e.g. Haller 1974). Zanot (1981) reviewed these and related studies, concluding that American consumers' attitudes about advertising had become more negative over the years. While these two dimensions do not comprehensively measure the underlying beliefs about advertising, they were central themes in the criticisms that Bauer and Greyser (B/G) and the AAAA sought to (in) validate. Although their open ended responses provided many "information" and "entertainment" reasons for liking advertising they 7 item measure has often been adopted as if it were sufficient.

There are controversies about whether the scales used by Bauer and Greyser (1968) and other studies in the 1960s really measured consumers' attitudes or beliefs. On the basis that beliefs are information a person has about a person, an object or an issue, Muehling (1987) claimed that beliefs must be combined with an evaluative factor in order to represent attitudes (cited in Ramaprasad, 2001, p. 5). As a result, researchers have concluded that Bauer and Greyer's (1968)

scales are used to measure beliefs (Muehling, 1987; Andrews, 1989; Pollay and Mittal, 1993).

Pollay and Mittal (1993) proposed a more thorough model which included various belief dimensions. This model was operationalized by an instrument on the basis of Bauer and Greyser's (1968) Seven-item scale and 21 other items made up of seven additional scales. Personal uses of media were measured by three scales (e.g. product information, social role and image, and hedonic/pleasure). Four scales measured the social effects of advertising; these included good for the economy, materialism, value corruption, and falsity/no sense. Pollay and Mittal's (1993) study found support for Bauer and Greyser's (1968) seven-factor model. They also found that beliefs about advertising predict consumers' AG.

Television advertising content is an important factor in the development of children consumer behaviour. Through the ad., children learn about new brands and products, how to use them. After getting insight into the concept of attitude toward television advertising from existing literature, a new investigation was made which expanded the already existed scale and to include various other belief dimensions.

## **RESEARCH METHODOLOGY**

Data for this research was collected both from rural and urban children of Punjab. Multistage cluster sampling technique was employed to collect the data. The three cities were selected to represent urban sample (Ludhiana, Moga, and Barnala) on the basis of high, medium and low level of population. The respective population of these cities was 14.9 percent; 8.7 percent and 2.3 percent of total population of Punjab as per census 2001. One block (Sidhwan Bet; Nihal Singh Wala; Barnala block) was randomly selected from each selected district. Then from the selected block two villages were randomly selected from the list prepared by District Economic and Statistical Organisation, to represent rural sample. Two elementary schools were recruited in each of the selected cities to collect data from urban sample and one elementary school from each village to represent rural sample. In all 6 urban school and 6 rural school were selected for the study.

Students generally came from lower- to- middle class backgrounds. The total number of students in each school ranged from 700 to 1500. Average class size ranged from 50 to 70 in all the schools selected. Respondents were 960 (476 urban and 484 rural children) grade 1 to 7 students aged 6 to 14 year. The survey was self administered for the Fourth, Fifth Sixth and seventh graders; however, due help was provided to 1 to 3 grade students. There were equal number of boys and girls. The mean age of the respondents was 10 years (S.d. = 1.9 years). Data

collection was coordinated along with the researcher, with a faculty member in the mass communication department and a doctoral student in psychology.

The questionnaire used in the study contained a pool statement pertaining to overall attitudes towards advertising, advertising effectiveness, its role in the society and other relevant issues. Initially a pool of 32 items were chosen for development of scale. All of these statements were adopted from earlier writings (Barksdale *et al.*, 1982; Bauer and Greyser, 1968; French *et al.*, 1982; Mehta 2000; Rossiter 1977; Derbaix & Pecheux 2003;). These statements covered the specific effects of TV advertising on children: (1) cognitive effects, focuses on perceptions, concepts, and beliefs regarding the attitude object, (2) attitudinal effects, focusing on children feelings towards TV advertising; and (3) behavioural effects, focusing on the extent to which children are persuaded to desire and ask for the advertised products. The present study defines attitude towards television advertising as a multi-factorial construct covering five fundamental aspects: credence, enjoyment, product-information, behaviour -intention and irritative. Participants' responses were recorded on a 5-point Likert scale (1= strongly agree; 5= strongly disagree). The questionnaire was originally drafted in English; it was then translated in Punjabi and back translated in English to ensure conceptual equivalence.

### **Data Validation**

The designed questionnaire was put to content validity (face), construct validity (convergent and discriminant) and cross validity. The face and content analysis eliminated most of the semantic variation and the list was reduced further via review and consultation with experts and via a small pilot test. 6 variables were eliminated after verifying the content and face validity and finally a scale of 22 variables were finalised by the researchers for the study. The attributes have high correlation with the related constructs (loading in excess of 0.5) and low correlation with unrelated construct (loading less than 0.4) and thus, the questionnaire passes the test of convergent and discriminant validity. According to Kline (1986), Cronbach coefficient alpha is the most efficient measure of reliability and when computed, it should always be greater than 0.7 when items are selected for test. So, Cronbach alpha reliability analysis was conducted for the items included in the study. The internal consistency - Cronbach alpha value for reliability of the questionnaire - was found to be 0.781. All the items were well above the 0.70, which was the commonly accepted threshold (De Vellis 1991; Nunnally and Bernstein 1994; Spector 1992). All individual scale items had statistically significant (at  $p < 0.05$  level) item-to-total correlations. Hence, all items are deemed reliable.

### Data Analysis

Statistical Package for Social Sciences, SPSS for Windows (11.5) and Microsoft Excel have been used to apply various statistical tests for data analysis purpose.

### RESULTS AND DISCUSSIONS

The results of the study were divided into two sections. In the first pass through the data produced frequencies and basic descriptive statistics, such as means and standard deviations, for each of the attitude statements.

#### Univariate analysis of statements measuring children attitude towards television advertising

A list of twenty-two opinions/statements regarding the influence of television advertising was presented and children were asked to indicate the strength of their agreement or disagreement with each of these statements on a five point Likert scale i.e. 'Strongly Agree', 'Agree', 'Neutral', 'Disagree', 'Strongly Disagree'. Each statement was tested via 't-test' with null hypothesis, 3 (neutral) i.e., that children's views would not be strongly positive or negative was concluded, the null hypothesis can be rejected at the 0.25 (2- tail) level of significance for all the statement tested as presented in Table 2 indicated that children's views are unlikely to be neutral on these issues from both the samples.

**Table 1**

**Comparative Mean Score on Parameters Measuring Rural and Urban Children Attitude Towards Television Advertising**

Sr. No.	Statement	Rural Mean±SD	Urban Mean±SD	t-value	p-value
1.	TV ads are a valuable source of information to me	4.26±0.760	4.15 ±0.778	1.543	0.123NS
2.	I find TV ads quite amusing and entertaining	3.67±1.156	3.70±1.098	0.364	0.716NS
3.	I get irritated when TV ads are there in mid of program	3.08±1.245	2.94±1.252	1.23	0.134NS
4.	TV ads present true features of the product advertised	2.98±1.261	2.82±1.134	1.485	0.138NS
5.	Sometimes, I find TV ads are more enjoyable as compared to other media content	3.23±1.289	3.00±1.307	1.970	0.049*

**Contd.**

**Contd. Table 1**

6.	I don't believe everything TV commercials tell me	3.59±1.234	3.69±1.186	0.91	0.1833NS
7.	I would like to buy the products advertised on TV	3.97±0.959	3.60±1.062	3.926	0.000**
8.	TV ads add humor to my life	3.68±1.136	3.62±1.099	.626	0.532NS
9.	TV ads provide information about new product launched in the market	3.93±1.175	4.05±0.990	1.260	0.208NS
10.	I think TV ads are misleading as they only show good things about the product advertised	4.01±1.274	4.21±1.230	1.45	0.113NS
11	Sometimes, I take pleasure in thinking what I heard or saw in TV ads	3.89±1.009	3.56±1.108	3.447	0.001**
12	TV ads inform me about latest fashion trends	3.97±1.028	3.85±0.884	1.381	0.168NS
13	TV ads show me the life that I would love to live	3.73±1.070	3.52±1.090	2.156	0.032NS
14	TV ads show me the product that suits my personality	3.65±1.087	3.32±1.135	3.285	0.001**
15	I like catchy punch lines in TV ads	4.10±1.739	3.72±0.819	3.06	0.008**
16	TV ads persuade me to buy unaffordable things just to show off	2.52±1.220	2.70±1.117	1.717	0.087NS
17	I often ask my parents to buy me what I see in TV commercials	3.48±1.241	3.26±1.139	2.031	0.043*
18	I think TV ads create lust in me to buy things	3.20±1.318	3.29±1.111	0.749	0.454NS
19	I consider TV ads as bad things	3.12±0.857	3.37±0.877	3.158	0.002**
20	When TV commercials are there I change the channel	3.20±0.919	3.15±0.935	.517	0.605NS
21	I think TV ads insult my intelligence as they show me the world of fantasy	3.26±0.990	3.20±0.913	0.708	0.479NS
22	TV ads persuade me to like. the product	3.39±1.328	3.23±1.262	1.375	0.170NS

Computed from primary data; NS= Non-Significant; \*Significant ( $p < 0.05$ ); \*\*Significant ( $p < 0.01$ ).

A perusal of Table 1 showed that among rural children the highest extent of agreement came to statement-1, 'T.V. ads are a valuable source of information to me' with mean score of 4.26 indicating that the rural children perceive that TV ads are valuable source of information for them, followed by statement-15 'I like catchy punch lines in TV ads', statement-10, 'I think TV ads are misleading as they only show good things about the product advertised' with a mean score of 4.01, statement-12, 'TV ads informs me about latest fashion trends' with a mean score 3.97, statement-7, 'I would like to buy the products advertised on TV' with a mean score of 3.97, statement -11, 'Sometimes, I take pleasure in thinking what I heard or saw in TV ads' with a mean score of 3.89, statement-13, 'TV ads show me the life that I would love to live' with a mean score of 3.73 and statement-8, 'TV ads add humor to my life' with a mean score of 3.68. The lowest level of agreement came with statement-16, 'TV ads persuade me to buy unaffordable things just to show off' with a mean score of 2.52, followed by statement-4, 'TV ads present true features of the product advertised' with a mean score of 2.98, statement-3, 'I get irritated when TV ads are there in mid of program' with a mean score of 3.08, statement-19, 'I consider TV ads as bad thing' with a mean score of 3.12.

In case of urban children the highest extent of agreement came with statement-10, 'I think TV ads are misleading as they only show good things about the product advertised with a mean score of 4.21, followed by statement-1, 'TV ads are a valuable source of information to me' with a mean score of 4.15, statement-9, 'TV ads provide information about new product launched in the market' with a mean score of 4.05, statement-12, 'TV ads inform me about latest fashion trends' with a mean score of 3.85, and statement-15, 'I like catchy punch lines in TV ads' with a mean score of 3.72. The lowest level of agreement came with statement-16, 'TV ads persuade me to buy unaffordable things just to show off ' with a mean score of 2.70, followed by statement-4, 'TV ads present a true feature of the product advertised' with a mean score of 2.82, statement-3, 'I get irritated when TV ads are there in the mid of program' with a mean score of 2.94 and statement-5, 'Sometimes, I find TV ads are most enjoyable as compared to other media contest' with a mean score of 3.00. The results indicated that the urban children consider TV ads to be less truthful and but still consider them as valuable source of information.

### **Multivariate Analysis to Measure Children Attitude Towards Television Advertising**

With the relatively large sample size and 22 attitude statements, exploratory

factor analysis was used to reduce the perception statements and place them under particular dimension to make it more meaningful. Exploratory factor analysis was performed on the rural and urban sample separately due to different demographic profiles and also on sample as a whole. Their factor analysis through principal component technique was done in order to highlight the contents that emerged through different statements. Principal component analysis was employed for extracting factors. Orthogonal rotation with varimax was run wherein each factor is independent of, or orthogonal from, all other factors. Cronbach's alpha was applied to check the reliability of scale. Before the application factor analysis the correlation matrix, Kaiser- Myer-Olkin Measure of sampling adequacy, Bartlett's Test of Sphericity was also conducted to check the overall significance of the correlation matrices. The value of KMO came to be 0.630 in case of rural sample; 0.620 in case of urban sample and .661 in case of Overall sample. This shows that statements are good enough for sampling. All the factors were given appropriate name on the basis of variables represented in each factor. Factors were named after the items that had their highest loadings on that factor.

The captured data was run in SPSS 11.5 windows. The responses of 480 children to 22 attitude measuring statements have been subjected to factor analysis. The screen plot suggested that five factors should be extracted in case of rural and urban samples and six factors in totality. The dimension formulated to define the construct of attitude towards TV advertising were confirmed after factor analysis and accounted for 66.48 per cent of total variance in case of rural samples; 65.20 per cent of total variance in case of urban sample and 75.28 per cent of total variance in totality.

### **Results of Factor Analysis Measuring Overall Children Attitude Towards Television Advertising**

The responses of 480 children to 22 perception statements have been subjected to factor analysis. The overall Kaiser-Meyer-Olkin measure of sampling adequacy was found to be 0.661 and Bartlett's Test of Sphericity was also significant (Approx. chi-square=2040.23, df=231, significance =.000) indicating the suitability of data for factor analysis. Thus, all of these examinations revealed that data was fit for factor analysis.

Table 2 displays, the results of principal component analysis with varimax rotation. Principal component analysis was employed for extracting factors. The number of factors to be extracted was finalized on the basis of 'Latent Root

**Table 2**  
**Principal Component Analysis with Varimax Rotation for Extracting Factors from Overall Children Response to Parameters Measuring Their Attitude Towards Television Advertising**

Statement	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Communalities
A1	0.384	0.599	0.421	0.21	0.114	0.109	0.752
A2	-0.03	0.121	0.619	0.324	0.137	0.228	0.574
A3	0.442	0.022	0.251	0.334	0.691	-0.05	0.850
A4	-0.017	0.798	-0.137	0.175	0.105	0.229	0.750
A5	-0.142	0.322	0.759	0.105	0.157	0.12	0.750
A6	-0.007	0.248	0.107	0.752	0.114	0.229	0.704
A7	0.813	0.018	0.002	0.204	0.213	-0.114	0.761
A8	0.447	0.401	0.548	0.051	0.115	0.273	0.751
A9	0.396	0.665	-0.013	-0.3	-0.261	0.006	0.757
A10	0.401	0.241	0.307	0.634	0.143	0.233	0.790
A11	-0.002	0.399	0.589	0.117	0.211	0.027	0.565
A12	0.257	0.692	-0.079	0.249	0.108	-0.102	0.635
A13	0.318	0.305	0.047	0.285	0.168	0.622	0.693
A14	0.445	0.246	0.148	0.085	0.154	0.508	0.569
A15	0.395	-0.157	0.638	-0.044	-0.243	0.162	0.675
A16	0.699	-0.193	0.431	-0.044	-0.154	0.052	0.740
A17	0.794	0.004	0.227	0.286	0.115	-0.003	0.777
A18	0.713	0.01	0.126	0.128	0.223	0.008	0.591
A19	-0.053	0.495	0.035	0.256	0.542	-0.123	0.623
A20	0.398	0.228	0.247	0.078	0.624	0.077	0.673
A21	0.361	0.359	0.032	0.671	0.132	-0.122	0.743
A22	0.762	0.221	0.025	-0.033	-0.149	0.102	0.664
Eigen Value	4.56	3.17	2.73	2.19	1.68	1.06	
Variance (%)	(20.72)	(14.41)	(12.41)	(9.95)	(7.63)	(4.81)	
Cumulative Variance (%)	(20.72)	(35.13)	(47.54)	(57.49)	(65.12)	(69.93)	
<b>Cronbach's alpha</b>	<b>.740</b>	<b>.756</b>	<b>.691</b>	<b>.781</b>	<b>.756</b>	<b>.689</b>	

- Extraction Method : Principal Component Analysis
- Rotation Method : Varimax with Kaiser Normalization
- Rotation converged in 13 iterations
- Cumulative variance was 69.93%
- Communalities were more than 0.50 to as high as 0.850
- Eigen values ranged from 4.56 to 1.06

Criterion' i.e. factors having eigenvalues greater than 1 have been selected. Orthogonal rotation with Varimax was run. Rotation covered in 13 iterations. In orthogonal rotation, each factor is independent of or from, all other factors. Six factors were extracted from responses of overall respondents which together accounted for 69.93 percent of the variance. The statement's loading on each of the factors (the loading of a statement on a factor can be viewed as equivalent to the correlation co-efficient of that statement with that factor where the range in from +1 through 0 to -1), their communalities, their Eigenvalues and the percentage of variance explained by each factor is displayed as per table 1.3. High positive loading make a major contribution to the meaning of that factor and high negative loading make a major contribution to the opposite meaning of that factor. As the total sample was of 480 children (240 rural children & 240 urban children) a factor score of .5 was acceptable.

Table 3 shows the summarized dimension wise list of statements in overall sample, arranged as per preference ruling, along with variance attached to each dimension as well factor loading attached to each statement giving a ready summarized view.

**Table 3**  
**Dimensions Extracted from Varimax Rotation Analysis Measuring Overall Children Attitude Towards Television Advertising**

Factor Number	Name of Dimension (% of Variance)	Label	Statement (Factor Loading)
Factor 1	Persuasion (20.72%)	A7	1. I would like to buy the products advertised on TV (0.813)
		A17	2. I often ask my parents to me what I see in TV commercials (0.794)
		A22	3. TV ads persuades me to like the product.(0.762)
		A18	4. I think TV ads creates a lust in me to buy things (0.713)
		A16	5. TV ads persuade me to buy unaffordable things just to show off (0.699)
Factor 2	Product Information (14.41%)	A4	1. TV ads present true features of the product advertised (0.798)
		A12	2. TV ads inform me about latest fashion trends (0.692)

**Contd.**

Contd. Table 3

		A9	3. TV ads provide information about new product launched in the market (0.665)
		A1	4. TV ads are valuable source of information to me (0.599)
Factor 3 (12.41%)	Enjoyment	A5	1. Sometimes, I find TV ads are more enjoyable as compared to other media content (0.759)
		A15	2. I like catchy punch lines in TV ads (0.638)
		A2	3. I find TV ads quite amusing and entertaining (0.619)
		A11	4. Sometimes, I take pleasure in thinking what I heard or saw in TV ads (0.589)
		A8	5. TV ads add humor to my life (0.548)
Factor 4	Credence (9.95%)	A6	1. I don't believe everything TV commercials tell me (0.752)
		A21	2. I think TV ads insult my intelligence as they show me the world of fantasy (0.671)
		A10	3. I think TV ads are misleading as they only show good things about the product advertised (0.634)
Factor 5	Irritative (7.63%)	AS3	1. I get irritated when TV ads are there in mid of program (0.691)
		A20	2. When TV commercials are there I change the channel (0.624)
		A19	3. I consider TV ads as bad things (0.542)
Factor 6	Social Role (4.81%)	A13	1. TV ads show me the life that I would love to live (0.622)
		A14	2. TV ads show me the product that suits my personality (0.508)

### **Results of Factor Analysis done for Measuring Rural Children Attitude Towards Television Advertising**

The responses of 240 rural respondents were factually analyzed so as to compare them with the results of urban respondents. The overall Kaiser-Meyer-Olkin measure of sampling adequacy was found to be 0.630 and Bartlett's Test of Sphericity was also significant (Approx. chi-square=985.40, df=231, significance =.000) indicating the suitability of data for factor analysis. Thus, all of these examinations revealed that data was fit for factor analysis.

The Table 4 states, the results of principal component analysis with varimax rotation for rural respondents, showing thereby the statement's loading on each of their factors, their communalities, the factor labeling, their Eigen values and the percentage of variance explained by each factor. Rotation covered in 12 iterations. In orthogonal rotation, each factor is independent of or from, all other factors. Six factors were extracted from responses of overall respondents, which together accounted for 66.48 percent of the cumulative variance. High positive loading make a major contribution to the meaning of that factor and high negative loading make a major contribution to the opposite meaning of that factor. As the total sample was of 240 children a factor score of .5 was acceptable.

The Table 5 displays the summarized dimension wise list of statements in case of rural samples, arranged as per preference ruling, along with variance attached to each dimension as well factor loading attached to each statement giving a ready summarized view.

**Table 4**  
**Principal Component Analysis with Varimax Rotation for Extracting Factors from Rural Children Responses to Parameters Measuring their Attitude Towards Television Advertising**

Statement	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Communalities
1	0.297	0.183	0.683	0.143	0.003	0.609
2	0.341	0.693	0.161	-0.168	0.212	0.696
3	0.446	0.414	-0.173	0.159	0.564	0.744
4	0.248	0.233	0.749	0.189	0.123	0.728
5	-0.386	0.596	0.107	0.184	0.154	0.573
6	-0.218	0.199	0.343	0.701	0.112	0.709
7	0.698	0.199	-0.157	0.158	0.109	0.588
8	0.266	0.769	0.004	-0.026	0.077	0.669
9	0.381	-0.046	0.588	0.285	0.279	0.652
10	-0.327	0.189	0.314	0.649	0.237	0.719
11	0.228	0.751	0.104	0.24	0.119	0.699
12	0.285	0.116	0.662	0.173	0.106	0.574
13	0.783	0.196	0.084	0.147	0.103	0.691
14	0.586	0.321	0.183	-0.045	0.183	0.515
15	0.399	0.585	-0.235	0.344	0.167	0.703
16	0.748	-0.296	0.345	-0.158	0.115	0.804
17	0.764	0.204	-0.166	0.184	0.109	0.699
18	0.801	0.173	0.073	0.112	0.146	0.711
19	-0.314	0.378	-0.261	0.194	0.532	0.63
20	0.391	0.347	0.343	0.227	0.518	0.711
21	-0.364	0.257	-0.266	0.515	-0.106	0.546
22	0.721	0.355	0.089	0.076	-0.001	0.660
Eigen Value	5.41	3.48	2.64	1.82	1.27	
Variance (%)	(24.58)	(15.82)	(12.01)	(8.29)	(5.78)	
Cumulative Variance (%)	(24.58)	(40.40)	(52.41)	(60.70)	(66.48)	
<b>Cronbach's alpha</b>	<b>0.896</b>	<b>0.797</b>	<b>0.785</b>	<b>0.864</b>	<b>0.747</b>	

- Extraction Method : Principal Component Analysis
- Rotation Method : Varimax with Kaiser Normalization
- Rotation converged in 12 iterations
- Cumulative variance was 66.48%
- Communalities were more than 0.50 to as high as 0.804
- Eigen values ranged from 5.41 to 1.27

**Table 5**  
**Dimensions Extracted from Varimax Rotation Analysis Measuring Rural Children Attitude Towards Television Advertising**

Factor Number	Name of Dimension (% of Variance)	Label	Statement (Factor Loading)
Factor 1	Persuasion (24.58%)	A18	I think TV ads creates a lust in me to buy things (0.801)
		A13	TV ads show me the life that I would love to live (0.783)
		A17	I often ask my parents to buy me what I see in TV commercials (0.764)
		A16	TV ads persuade me to buy unaffordable things just to show off (0.748)
		A22	TV ads persuade me to like the product. (0.721)
		A7	I would like to buy the products advertised on TV (0.698)
		A14	TV ads show me the product that suits my personality (0.586)
Factor 2	Enjoyment (15.82%)	A8	TV ads add humor to my life (0.769)
		A11	Sometimes, I take pleasure in thinking what I heard or saw in TV ads (0.751)
		A2	I find TV ads quite amusing and entertaining (0.693)
		A5	Sometimes, I find TV ads are more enjoyable as compared to other media content (0.596)
		A15	I like catchy punch lines in TV ads (0.585)
Factor 3	Product information (12.01%)	A4	TV ads present true features of the product advertised (0.749)
		A1	TV ads are a valuable source of information to me (0.683)
		A12	TV ads inform me about latest fashion trends (0.662)

**Contd.**

**Contd. Table 5**

		A9	TV ads provide information about new product launched in the market (0.588)
Factor 4	Credence (8.29%)	A6	I don't believe everything TV commercials tell me (0.701)
		A10	I think TV ads are misleading as they only show good things about the product advertised (0.649)
		A21	I think TV ads insult my intelligence as they show me the world of fantasy (0.515)
Factor 5	Irritative (5.78%)	A3	I get irritated when TV ads are there in mid of program (0.564)
		A19	I consider TV ads as bad things (0.532)
		A20	When TV commercials are there I change the channel (0.518)

### **Results of factor analysis done for measuring urban children attitude towards television advertising**

The responses of 240 urban respondents were factually analyzed so as to compare them with the results of rural respondents. The overall Kaiser-Meyer-Olkin measure of sampling adequacy was found to be 0.620 and Bartlett's Test of Sphericity was also significant (Approx. chi-square = 1465.11, df = 231, significance = .000) indicating the suitability of data for factor analysis.

Table 6 states, the results of principal component analysis with varimax rotation for urban children attitude towards television advertisement, showing thereby the statement's loading on each of their factors, their communalities, the factor labeling, their Eigen values and the percentage of variance explained by each factor. Rotation covered in 10 iterations. In orthogonal rotation, each factor is independent of or from, all other factors. Six factors were extracted from responses of urban respondents which together accounted for 63.09 percent of the cumulative variance. High positive loading make a major contribution to the meaning of that factor and high negative loading make a major contribution to the opposite meaning of that factor. As, the total sample was of 240 children a factor score of .5 was acceptable.

**Table 6**  
**Principal Component Analysis with Varimax Rotation for Extracting Factors from Urban Children Responses to Parameters Measuring Their Attitude Towards Television Advertising**

Statement	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Communalities
1	0.781	0.258	0.144	0.319	0.011	0.80
2	-0.058	0.114	0.656	0.352	0.017	0.57
3	0.001	0.321	0.002	0.701	0.011	0.59
4	0.634	0.198	0.0389	-0.171	0.265	0.54
5	-0.071	-0.142	0.782	0.236	0.075	0.70
6	-0.018	0.289	0.149	0.127	0.701	0.61
7	0.394	0.637	0.188	0.058	-0.142	0.62
8	0.389	0.284	0.699	0.153	0.117	0.76
9	0.803	0.185	0.126	-0.081	0.005	0.70
10	0.421	0.358	-0.021	-0.013	0.502	0.56
11	0.318	0.222	0.518	-0.039	0.214	0.47
12	0.659	-0.055	0.149	-0.126	0.245	0.54
13	0.319	0.741	0.242	0.031	0.112	0.72
14	0.721	0.238	0.279	0.264	0.001	0.72
15	0.453	0.216	0.687	-0.025	0.207	0.77
16	0.339	0.522	-0.12	0.371	0.005	0.54
17	0.381	0.692	0.223	-0.048	0.005	0.68
18	0.378	0.537	0.271	0.188	0.113	0.55
19	-0.066	0.216	-0.025	0.645	0.417	0.64
20	0.02	-0.015	0.043	0.778	0.012	0.61
21	-0.295	-0.075	-0.101	0.298	0.621	0.58
22	0.399	0.601	0.204	0.126	0.191	0.61
Eigen Value	4.17	3.13	2.72	2.24	1.62	
Variance (%)	(18.95)	(14.23)	(12.36)	(10.18)	(7.36)	
Cumulative Variance (%)	(18.95)	(33.18)	(45.55)	(55.73)	(63.09)	
<b>Cronbach's alpha</b>	<b>0.834</b>	<b>0.759</b>	<b>0.748</b>	<b>0.803</b>	<b>0.785</b>	

- Extraction Method : Principal Component Analysis
- Rotation Method : Varimax with Kaiser Normalization
- Rotation converged in 10 iterations
- Cumulative variance was 63.09percent
- Communalities were more than 0.50 to as high as 0.80
- Eigen values ranged from 4.17 to 1.62

Table 7 displays the summarized dimension wise list of statements in case of urban samples, arranged as per preference ruling, along with variance attached to each dimension as well factor loading attached to each statement giving a ready summarized view.

**Table 7**

**Dimensions Extracted from Varimax Rotation Analysis Measuring Urban Children Attitude Towards Television Advertising**

Factor Number	Name of Dimension (% of Variance)	Label	Statement (Factor Loading)
Factor 1	Product Information (18.95%)	S9	TV ads provide information about new product launched in the market (0.803)
		S1	TV ads are a valuable source of information to me (0.781)
		S14	TV ads show me the product that suit my personality (0.721)
		S12	TV ads inform me about latest fashion trends (0.659)
		S4	TV ads present true features of the product advertised (0.634)
Factor 2	Persuasion (14.23%)	S13	TV ads show me the life that I would love to live (0.741)
		S17	I often ask my parents to buy me what I see in TV commercials (0.692)
		S7	I would like to buy the products advertised on TV (0.637)
		S22	TV ads persuade me to like the product. (0.601)
		S18	I think TV ads create lust in me to buy things (0.537)
		S16	TV ads persuade me to buy unaffordable things just to show off (0.522)
Factor 3	Enjoyment (12.36%)	S5	Sometimes, I find TV ads are more enjoyable as compared to other media content (0.782)
		S8	TV ads add humor to my life (0.699)
		S15	I like catchy punch lines in TV ads (0.687)

**Contd.**

**Contd. Table 7**

		S2	I find TV ads quite amusing and entertaining (0.656)
		S11	Sometimes, I take pleasure in thinking what I heard or saw in TV ads (0.518)
Factor 4	Irritative (10.18%)	S3	I get irritated when TV ads are there in mid of program (0.701)
		S20	When TV commercials are there I change the channel (0.778)
		S19	I consider TV ads as bad things (0.645)
Factor 5	Credence (7.36%)	S6	I don't believe everything TV commercials tell me (0.701)
		S21	I think TV ads insult my intelligence as they show me the world of fantasy (0.621)
		S10	I think TV ads are misleading as they only show good things about the product advertised (0.502)

**Table 8**

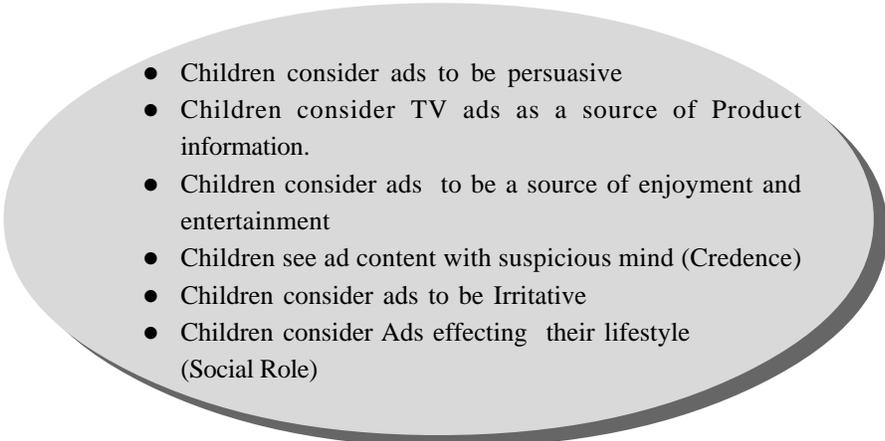
**A Bird's Eyeview of Dimensions Extracted from Factor Analysis of Parameters Measuring Children Attitude Towards Television Advertising**

Sample\ Dimension	Overall Sample (N=480)	Urban Sample (N=240)	Rural Sample (N=240)
Factor 1	Persuasion (20.72%)	Product Information (18.95%)	Persuasion (24.58%)
Factor 2	Product Information (14.41%)	Persuasion (14.23%)	Enjoyment (15.82%)
Factor 3	Enjoyment (12.41%)	Enjoyment (12.36%)	Product information (12.01%)
Factor 4	Credence (9.95%)	Irritative (10.18%)	Credence (8.29%)
Factor 5	Irritative (7.63%)	Credence (7.36%)	Irritative (5.78%)
Factor 6	Social Role (4.81%)		

Table 8 and Fig. 1 provides an overview of all the factors along with the variance extracted through exploratory factor analysis between all samples to provide a bird eye view of the results.

A bird's eye view of factor analysis has been summarized in above table. It is evident from above table that sub samples of rural and urban children have similar factor structure as that of overall sample. The factor 'Social Role' is an independent dimension for overall sample but it is a part of 'Persuasion' in case of rural sample & 'Persuasion' & 'Product Information' in case of urban samples. Based upon these observations, it can be concluded that 5 factors incorporate major dimensions of population under study. The rural children as well as urban children showed positive attitude towards television commercials considering them as important source of information, highly recognizing them as enjoyable and do agree that they are quite persuasive.

**Figure 1 : Dimensions of children attitude towards advertising in India**

- 
- Children consider ads to be persuasive
  - Children consider TV ads as a source of Product information.
  - Children consider ads to be a source of enjoyment and entertainment
  - Children see ad content with suspicious mind (Credence)
  - Children consider ads to be Irritative
  - Children consider Ads effecting their lifestyle (Social Role)

*Six dimensions emerged from the result of the study measuring  
Indian children attitude towards television advertising*

- **Enjoyment or Entertainment** : This dimension predicts that children experience advertising as pleasure upon exposure or in recollection of ideas what are presented in advertisements. They consider that ads can be beautiful to look at, touching in their sentiments, funny in their portrayed events, or uplifting in their music, fun and happiness and humor present in TV ads. Advertising as hedonic/pleasure was measured with the following items: advertising is often amusing and entertaining, and sometimes I take pleasure

in thinking about what I saw, heard or read in advertisement (Pollay and Mittal,1993) .This dimension is considered as backbone of children attitude towards TV advertising, as likeability of ads effect children brand and purchase preferences.

- **Product Information :** Much of the discussion by economists and the advocacy justification of advertising role as a provider of information (Norris, 1984). This information, it is argued permits greater market place efficiencies, (i.e. more exact matching between consumer' needs and wants and producers' offerings). Advertising provides product information to consumers. Product information is measured using the indicators suggested by Pollay and Mittal (1993): advertising is a valuable source of information about sales/ products, learn which brands have the features I am looking for, and keep up to date with products available on the market.
- **Credence :** The credence means an enduring propensity to believe advertising claims and to understand the nature and purpose of TV commercials. The concepts of credence is close to that of skepticism towards TV advertising in general (high levels of credence indicate low level of skepticism towards commercials) because it implies the consumers' recognition that advertisers have specific motives and that their communications may be biased and varied in their truthfulness. Obermiller and Spangenberg (2000) defined the consumer skepticism as the general tendency towards disbelief of advertising claims. Skepticism is a basic "marketplace belief" that varies across individuals and is related to general persuadability. The term credence is used as it can be assumed that skepticism is a construct more related to accumulated experiences and more developed inferential skills. Credibility can be measured e.g. 'you can always believe what people in television commercials say or do' (Rossiter, 1977), 'Nothing in commercials is true', and I don't believe everything commercials tell me.
- **Persuasion :** It is subjective perception of the persuasive power of TV advertising, the perceived evaluation of the effect on desire for the advertised products and the effect on their request to parents to buy these products. Commercials can instill a desire for a particular product and affect both the actual and intended behavior. Rossieter (1977) included this dimension in his final scale (comprised of 7 items) even though only one of the items was meant to assess it (Television commercials try to make people buy things they don't really need. This dimension covers Indian children purchase intentions to buy the advertised products.
- **Irritative :** This dimension of the Indian children showed that they sometimes

consider advertising to be irritative in nature. Speck and Elliott (1997) concludes that ads avoidance was higher for TV than for other media, such as magazines and newspapers. The avoidance behavior result into negative attitude towards television ads and take a form of 'zapping' switching other channels during ads.

- **Social Role** : Much advertising provides life style imagery, and its communication goals often specify a brand image or personality, the portrayal of typical or idealized users ,associated status or prestige, or social reactions to purchase, ownership, and use. The emergence of this dimension shows that Indian children feel that the advertising teaches them about fashion and what to buy to impress others.

## **CONCLUSIONS AND RECOMMENDATIONS**

The results obtained from both the samples showed certain similarities. Few new dimensions emerged from the results i.e. product information; social role apart from already discussed dimension i.e. credence, behavioral- intention, and enjoyments which were already considered by earlier researchers. Five dimensions emerged from the results of both the samples, only weightage to the particular dimension varied. Urban subjects have shown strongest belief for product information and persuasion dimension while rural subjects for persuasion and enjoyment indicating that rural children strongly believe that their purchase behaviour gets affected by television advertising. It may be due to the fact that Indian children now have easy access to domestic and foreign TV channels , which is making them exposed to too many new products with attractive appeals . They look to advertising for information regarding available choices and respond favorably towards it. Children from both the domiciles showed less specktism towards television advertising.The result showed rural children as compared to urban children look at advertising as more manipulative than informative. This may be due to the fact that it is influenced by their educational backgroud and social class of their parents.Earlier studies indicated that there is a significant relationship between children's attitude towards TV advertising and parent conformism. As a personality trait, conformism is a feature of parents' mentality that can be extermely important as it influences children's attitude and behaviour towards commercials Wiman's (1983). Overall, children from both the domociles have positive attitude towards television advertisements and agreed that it has strong impact on their purchase intentions.

The above findings have significant implications for advertisers, agencies, and advertising researchers. First, the research reminds us that, to be effective,

advertising is something people should like looking at, believe, and find utility with keeping them up-to-date about products and services. Advertising that is entertaining, informative, and truthful promotes children to like advertising in general and believe in its value. The advertisers must realize that the children in this age are in informative stages of their life and adoption of inappropriate approaches in developing ad campaigns would harm them in the future. Policy makers can use the information provided by the research to develop different advertising strategies for approaching children from both the domiciles. By keeping this in mind as they should develop new executions, advertisers and agencies which will combat negative attitudes towards advertising and improve responses to all advertising.

### **LIMITATIONS AND FUTURE RESEARCH**

Like all other survey research, this exploratory study also suffers from some limitations. The results of this study be interpreted with care. Since it focuses on the children who are from a selected segment of the country, the result may not be generalised to overall Indian children attitude towards television advertisements. In addition, as noted earlier, the use of a rather small, convenience sample may have distorted the result to some extent. Furthermore, the fact that the findings summarized in this article involve only perceptions of the advertising and their contents is another limitation. We must be sensitive to the fact that self-reports may not provide the most reliable estimates of attitude towards TV advertising. Direct behavioural assessments should offer considerable potential for future research.

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## **Usage Behaviour of Consumers For Mobile Phone Services in Punjab**

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### **Abstract**

The paper presents the findings of a primary study of the usage behavior of consumers for mobile phone services in Punjab. Nine mobile phone service providers currently providing service in the Punjab Telecom Circle have been selected for the study. Five telecom districts, namely, Ludhiana, Amritsar, Jalandhar, Chandigarh and Patiala have been chosen to represent the telecom circle. 450 consumers of mobile phone services have been selected on the basis of convenience sampling. The paper analyzes the reasons for choosing pre-paid or post-paid services, influencers in the selection of telecom service provider, duration of service usage, and monthly expenditure of mobile phone connection. It also presents the implications, based on the findings, for the telecom service providers and other stakeholders.

### **Key Words**

Consumers, Telecom, Mobile, Pre-paid, Post-paid, Behavior

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### **INTRODUCTION**

Human behavior itself is a complex area to study. Majaro (1982) considers man as a complex creature and his behavior is stimulated and motivated by a host of cultural, sociological, economic and psychological factors. The behavior of consumers, which is a subset of human behavior, with respect to their buying and usage patterns, is an area which requires even greater understanding. Study of consumers covers both overt and covert activities and is a dynamic phenomenon. There could be several internal and external stimuli influencing the consumers

with respect to their choice of services and further usage. Moreover, consumers often behave unpredictably and respond differently to a stimulus at different points of time. On many occasions, they are driven by emotions rather than rational reasons. Kiel et al. (1981) suggested that the customer's behavior is influenced in terms of their demographic and psychographic characteristics.

The decisions of marketers are linked to a correct understanding of consumer behavior. A number of studies reviewing different angles of behavior may be required to gain insight into the minds of consumers. Since services are intangible and not as homogeneous as products, it is all the more challenging and critical to understand the usage behavior and patterns of the consumers of services as compared to those of products. Within the services sector, the telecom sector, particularly the mobile telephony, offers an extremely competitive environment for studies on consumers and their behavior.

The dynamics of managing customers in the Indian telecom sector have undergone a sea change with the advent of better technology and higher bandwidth spectrum. Understanding the usage behavior of consumers is becoming increasingly crucial for players in the sector. The sector offers one of the lowest tariffs across the world and is also one of the fastest growing ones. The number of service providers and number of subscribers enrolled under each service provider have grown exponentially since the mid-nineties, thus enhancing the importance of studying consumer behavior. The paper explores the usage behavior of consumers of mobile phone services in Punjab. It analyzes the reasons for choosing the type of service (pre-paid or post-paid), influencers in selection of the telecom service provider, duration of usage of services and the monthly expenditure on the services.

## **PREVIOUS RESEARCH STUDIES**

One of the original big ideas in marketing has been given by Levitt (1975) that for firms to stay in existence, they should focus not on selling products, but rather on fulfilling the needs of their customers. The needs of the customers are fulfilled better when the understanding of consumer behavior is more comprehensive. Many firms are now paying more attention to understanding their consumers and building stronger relationships with their existing customers. Marketers strive to understand their behavior so they can better formulate appropriate marketing stimuli that will result in increased sales and brand loyalty (Wendy, 2010). It can then lead to wholesome buying experiences for the consumers and higher profitability for the marketers.

Some studies, conceptual as well as empirical, related to consumer behavior, especially in the context of telecom sector, have been reviewed below.

Jahanzeb and Jabeen (2007) have studied churn management in the telecom industry of Pakistan. The two service providers selected were Telenor and Ufone. The aim of the research was to provide an insight into the issue of churn. The sample profile comprised of 100 male post-paid subscribers, between 30 to 45 years of age, employed in the middle management level of the corporate sector and users of either Telenor or Ufone (50 each). The study has concluded that dissatisfaction with the dimensions of price, voice quality or network coverage were the main reasons for customer churn at both Ufone and Telenor. The study has recommended that customer retention must be a part of the planning phase along with customer acquisition, in all telecommunication organizations.

Taneja and Kaushik (2007) have deduced the factors that customers perceive to be the most important while utilizing the services of a mobile services provider. The study was conducted at Bhiwani and Hisar districts (including some villages) in Haryana during February-March, 2007 by use of judgmental sampling method on 186 respondents. The mobile users group the various features into four factors--customer care (interaction), service features, call rates, promotion and availability in the same order of importance. A list of 20 statements was used and factor analysis method was employed to finally extract these four factors. Hypothesis testing has revealed that customers perceive these factors in a similar order of importance, irrespective of sex, qualification, profession and marital status. The researchers have concluded that better customer care services and service features, especially strong network range are most important for retaining the customers in mobile services.

Ganguli (2008) has attempted to find out the underpinnings, using factor analysis, of the service variables for Indian cellular users. Demographic variables like gender, age, education and cellular usage variables like usage type and type of connection have been used as discriminating variables for satisfied and unsatisfied customers. The sample size was 220 cellular users which consisted of customers of 15 banks in the city of Kota Kinabalu, Malaysia. The study has concluded that the satisfaction level increases with increase in age, the female customers are more satisfied than the male ones, customers become more satisfied with more amount of time spent on a particular network, the prepaid customers are more satisfied than the postpaid ones, and the chances of customer dissatisfaction increase with an increase in the amount of cellular phone usage.

Krishnan and Kothari (2008) have analyzed the 'antecedents' of customer

relationships in the telecommunication sector. The prerequisites of a customer to enter into a relationship mode are what have been termed as the 'antecedents' by the researchers. The sample size chosen was 100 mobile subscribers from both genders and various age and income groups. The location of the study was Rajasthan. The independent variables were identified and named as Seven Desired Value Added Services (7DVAS). The dependent variable chosen was the preferred telecom brand. The independent variables 7DVAS were variety of service, price, advertisements, employee behavior, customer service, accuracy in billing and timely information. The results have shown that the best indicators for brand recommendation were variety of service and customer service.

Khan and Manthiri (2011) have studied the aspects related to switching tendencies of consumers of mobile phone services. 520 mobile phone consumers belonging to Madurai district were studied through interview method. The researcher has found that greater competition, increasing expectations and dissatisfaction amongst consumers lead to switching tendencies. Dissatisfaction in consumers has arisen due to excessive billing, call drop, cross talk, high cost of handsets and high operating cost.

Malhotra et al. (2011) have studied the different purposes of the use of a mobile phone and the criteria of selection of a service provider in the Delhi and NCR region. They have focused on the impact of mobile number portability on the behavior of consumers. The satisfaction levels of the consumers have been measured. The research has suggested that the existing players should focus on certain service aspects, to allure new customers and retain existing ones.

Solomon (2012) has examined, using a quantitative methodology, the selection of mobile phone services by students. The researcher has surveyed 500 university and polytechnic students in Ghana and has found that the major reasons for changing phone services are reliability and cost savings. The study also indicated that reference groups and reputation influenced the selection and change of service provider.

The foregoing review of literature reveals that hardly any comprehensive study has been conducted to examine the usage behavior of consumers for mobile phone services in Punjab. The present study is an attempt in that direction.

### **OBJECTIVES OF THE STUDY**

The following specific objectives have been pursued for the purpose of the present study :

- To analyze the usage behavior of consumers of mobile phone services in Punjab.
- To suggest policy implications to the telecom service providers.

## **METHODOLOGY**

From the telecom industry point of view, Punjab state is a part of the Punjab Telecom Circle which also covers the Union Territory of Chandigarh and Panchkula town of Haryana. The Circle has been divided into eleven telecom districts. Executives of telecom service providers and other practitioners in telecom area suggested that five districts, namely, Ludhiana, Chandigarh, Jalandhar, Amritsar and Patiala together account for around 70-80% of the total mobile phone subscriber base of the circle. Due to a constraint of time and resources, these telecom districts were considered as being largely representative of the complete circle and were chosen as the universe of study.

A sample of 450 consumers was taken on the basis of convenience sampling. The consumers are using the mobile phone services of nine telecom service providers, namely, Airtel, BSNL, Docomo, Idea, Reliance, Tata Indicom, Videocon (Connect), Vodafone and Aircel. In the sample, pre-paid users constituted 68.9 per cent, the rest being users of post-paid services. Male consumers constituted 57.3 per cent of the sample. Most of the respondents (71.1%) were in the age-group of 20-40 years followed by 12.9 per cent in the 40-60 age-group and 11.8 per cent in the 'up to 20' age-group. Monthly family incomes ranged from less than 20,000 (10.6% of the sample) to more than 60,000 (32.0% of the sample). 37.3 per cent of the respondents were postgraduates, 26.9 per cent were professionals, 22.9 per cent were graduates and the rest undergraduates. Most of the respondents were in service (29.8%), studying (29.3%) or managing businesses (18.7%).

Data were collected through a structured, pre-tested and non-disguised questionnaire. It was then analyzed by using SPSS (16.0). The telecom service usage behavior of consumers was analyzed on the basis of two variables, namely, type of service (pre-paid and post-paid) and gender. These two variables were considered more relevant than other variables, as revealed by some earlier studies, and also on the basis of opinions of academicians and practitioners in the area. Chi-square test was applied to test various hypotheses. Ranking of statements was done by using the method of weighted rankings scores and the significance of difference of responses of pre-paid and post-paid as well as those of male and female consumers was checked through and Kruskal-Wallis H test.

## ANALYSIS AND DISCUSSION

Out of the 450 consumers in the sample, 310 (68.9%) were found to be users of pre-paid mobile phone services while 140 (31.1%) were found to be users of post-paid services. Gender-wise distribution of pre-paid and post-paid consumers has been shown in Table 1.

**Table 1**  
**Gender-wise Distribution of Pre-paid and Post-paid Consumers**

Type of Service	Male	Female	Total
Pre-paid	182 (70.5)	128 (66.7)	310 (68.9)
Post-paid	76 (29.5)	64 (33.3)	140 (31.1)
<b>Total (N)</b>	<b>258</b>	<b>192</b>	<b>450</b>

Note: In this table and all subsequent tables, figures without parentheses indicate frequencies, and figures in parentheses represent percentages out of the column total.

The Table reveals that 182 out of 258 male consumers (70.5%) in the sample are users of pre-paid mobile phone services while the remaining 76 (29.5%) male consumers are users of post-paid services. Out of 192 female consumers, 128 (66.7%) were found to be users of pre-paid mobile phone services while the remaining 64 (33.3%) were found to be users of post-paid services.

Table 2 shows telecom service provider-wise and type of service-wise distribution of consumers.

**Table 2**  
**Telecom Service Provider-wise and Type of Service-wise Distribution of Consumers**

Telecom Service Provider	Type of Service		Total
	Pre-paid	Post-paid	
Airtel	80 (25.8)	47 (33.6)	127(28.2)
Vodafone	57(18.4)	35(25.0)	92(20.4)
BSNL	69(22.3)	9(6.4)	78(17.3)
Idea	37(11.9)	29(20.7)	66(14.7)
Reliance	26(8.4)	15(10.7)	41(9.1)
Docomo	24(7.7)	1(0.7)	25(5.6)
Tata Indicom	6(1.9)	4(2.9)	10(2.2)
Aircel	7(2.3)	0(0.0)	7(1.6)
Videocon	4(1.3)	0(0.0)	4(0.9)
<b>Total (N)</b>	<b>310</b>	<b>140</b>	<b>450</b>

The Table reveals that most of the consumers in the sample use services of 'Airtel' (28.2%) and 'Vodafone' (20.4%). This is followed by 'BSNL' (17.3%), 'Idea' (14.7%), 'Reliance' (9.1%), 'Docomo' (5.6%), 'Tata Indicom' (2.2%), 'Aircel' (1.6%), and 'Videocon' (0.9%).

Pre-paid consumers constitute 68.9 per cent (310 out of 450) of the sample. Most of them belong to 'Airtel' (25.8%). This is followed by 'BSNL' (22.3%), 'Vodafone' (18.4%), 'Idea' (11.9%), 'Reliance' (8.4%), 'Docomo' (7.7%), 'Aircel' (2.3%), 'Tata Indicom' (1.9%) and 'Videocon' (1.3%). 31.1 per cent (140 out of 450) of the sample comprises of post-paid consumers. Most of them use the services of 'Airtel' (33.6%). This is followed by 'Vodafone' (25.0%), 'Idea' (20.7%), 'Reliance' (10.7%), 'BSNL' (6.4%), 'Tata Indicom' (2.9%), and 'Docomo' (0.7%).

Table 3 displays the telecom service provider-wise and gender-wise distribution of consumers.

**Table 3**

**Telecom Service Provider-wise and Gender-wise Distribution of Consumers**

Telecom Service Provider	Gender		Total
	Male	Female	
Airtel	73(28.3)	54(28.1)	127(28.2)
Vodafone	48(18.6)	44(22.9)	92(20.4)
BSNL	48(18.6)	30(15.6)	78(17.3)
Idea	31(12.0)	35(18.2)	66(14.7)
Reliance	27(10.5)	14(7.3)	41(9.1)
Docomo	18(7.0)	7(3.7)	25(5.6)
Tata Indicom	5(1.9)	5(2.6)	10(2.2)
Aircel	5(1.9)	2(1.1)	7(1.6)
Videocon	3(1.2)	1(0.5)	4(0.9)
<b>Total (N)</b>	<b>258</b>	<b>192</b>	<b>450</b>

The Table shows that male consumers constitute 57.3 per cent (258 out of 450) of the sample. Most of them belong to 'Airtel' (28.3%). This is followed by 'BSNL' (18.6%), 'Vodafone' (18.6%), 'Idea' (12.0%), 'Reliance' (10.5%), 'Docomo' (7.0%), 'Aircel' (1.9%), 'Tata Indicom' (1.9%) and 'Videocon' (1.2%).

42.7 per cent (192 out of 450) of the sample comprises of female consumers. In female category, most of the consumers use services of 'Airtel' (28.1%) and 'Vodafone' (22.9%). This is followed by 'Idea' (18.2%), 'BSNL' (15.6%), 'Reliance' (7.3%), 'Docomo' (3.7%), 'Tata Indicom' (2.6%), 'Aircel' (1.1%), and 'Videocon' (0.5%).

### Reasons for Choosing Pre-paid or Post-paid Services

The pre-paid as well as post-paid respondents were asked the single most important reason for choosing the respective type of services. The reasons for choosing pre-paid services have been shown gender-wise in Table 4.

**Table 4**  
**Gender-wise Distribution of Reasons of Consumers for Choosing Pre-paid Services**

Reasons	Male	Female	Total
Monthly expense Management	55 (30.2)	36 (28.1)	91 (29.4)
Lower Rates for Calls and SMS	58 (31.9)	28 (21.9)	86 (27.7)
Freedom from bills and billing problems	67 (36.8)	64 (50.0)	131 (42.3)
Any Other (Lower Internet rates)	2 (1.1)	0 (0.0)	2 (0.6)
<b>Total (N)</b>	<b>182</b>	<b>128</b>	<b>310</b>

Chi-Square value : 7.316, Not Significant at 5% level of Significance

The Table reveals that most of the respondents (42.3%) stated that 'Freedom from bills and billing problems' is the single most important reason for choosing the pre-paid services for mobile phone connections. This is followed by 'Monthly expense management' (29.4%), 'Lower rates for calls and SMS' (27.7%) and 'Lower internet rates' (0.6%) as reasons for choosing pre-paid services. Gender-wise analysis indicates that most of the male consumers, (36.8%) expressed that 'Freedom from bills and billing problems' is the single most important reason for choosing the pre-paid services for their mobile phone connections. This is followed by the reasons 'Lower rates for calls and SMS' (31.9%), 'Monthly expense management' (30.2%), and 'Lower internet rates' (1.1%). In the case of female consumers also, most of them (50.0%) are of the opinion that 'Freedom from bills and billing problems' is the single most important reason for choosing the pre-paid services. This is followed by the reasons 'Monthly expense management' (28.1%), and 'Lower rates for calls and SMS' (21.9%).

In order to examine whether significant differences exist between male and female consumers with respect to the reasons for choosing pre-paid services, Chi-Square statistic was applied and the following null hypothesis was tested.

**H<sub>01</sub>** : There are no significant differences between male and female consumers with respect to the reasons for choosing pre-paid services.

The Chi-Square value shows that there are no significant differences, at 5 per cent level of significance, between male and female consumers with respect to the reasons for choosing pre-paid services, thus accepting the null hypothesis.

Like pre-paid services, the gender-wise reasons for choosing post-paid services have been shown in Table 5.

**Table 5**

**Gender-wise Distribution of Reasons of Consumers for Choosing Post-paid Services**

Reasons	Male	Female	Total
Credit-Payment after usage	24 (31.6)	16 (25.0)	40 (28.6)
Unlimited calls unlike pre-paid option	28 (36.8)	30 (46.9)	58 (41.4)
Wider choice of tariff plans	23 (30.3)	18 (28.1)	41 (29.3)
Any other (Recommendations of known users)	1 (1.3)	0 (0.0)	1 (0.7)
<b>Total (N)</b>	<b>76</b>	<b>64</b>	<b>140</b>

Chi-Square value : 2.267, Not Significant at 5% level of Significance

The Table depicts that most of the respondents (41.4%) stated that 'Unlimited calls unlike pre-paid option' is the single most important reason for choosing the post-paid services for mobile phone connections. This is followed by the reasons 'Wider choice of tariff plans' (29.3%), 'Credit-Payment after usage' (28.6%) and 'Recommendations of known users' (0.7%).

Gender-wise analysis indicates that in case of male consumers, 36.8 per cent expressed that 'Unlimited calls unlike pre-paid option' is the single most important reason for choosing the post-paid services. This is followed by the reasons 'Credit-Payment after usage' (31.6%), 'Wider choice of tariff plans' (30.3%), and 'Recommendations of known users' (1.3%).

In case of female consumers, most of them (46.9%) stated that 'Unlimited calls unlike pre-paid option' is the single most important reason for choosing the post-paid services. This is followed by the reasons 'Wider choice of tariff plans' (28.1%), 'Credit-Payment after usage' and (25.0%).

In order to examine whether the differences between male and female consumers as regards the reasons for choosing post-paid services are significant or not, Chi-Square statistic was applied and the following null hypothesis was tested.

$H_{02}$  : There are no significant differences between male and female consumers with respect to the reasons for choosing post-paid services.

The Chi-Square value shows that there are no significant differences, at 5 per cent level of significance, between male and female consumers with respect to the reasons for choosing post-paid services, thus accepting the null hypothesis.

### Influencers in the Selection of Telecom Service Provider

The respondents were asked to rank from one to six the influencers which guided their decision to select their current telecom service provider. The final ranks of options which influenced the decision of consumers to select their telecom service provider were determined by the method of weighted rankings. The weights assigned were six to rank one with 'maximum influence' and one to rank six with 'minimum influence'. The weights signify the preference of respondents as higher weights signify more influence and lower weights signify less influence. As a result, the option with the highest weighted ranking score was found to have 'maximum influence' and that with the lowest weighted ranking score was adjudged to have 'minimum influence' on the decision to select the telecom service provider.

Table 6 gives the Weighted Ranking Scores (WRS) of six influencers guiding the decision of consumers in selecting their telecom service provider for the overall, pre-paid and post-paid samples of consumers.

**Table 7**

#### Type of Service-wise Weighted Rankings Scores (WRS) of Influencers in Selection of Telecom Service Provider

Influencers	Overall Sample	Pre-paid	Post-paid	Kruskal-Wallis H Test	
				Statistics	P-Values
Recommendations of Known Users	2268	1560	708	0.133	0.716
Recommendations of Salespeople	1347	902	445	2.830	0.093
Print Advertisement	1504	1012	492	2.883	0.090
Television Advertisement	1927	1330	597	0.002	0.963
Outdoor Advertisement	1334	924	410	0.228	0.633
Internet Advertisement	1070	783	290	8.985	0.003*

\* Significant at 0.01 level

The Table reveals that for the overall sample, 'Recommendations of Known Users' (WRS=2268) has maximum influence in the selection of telecom service provider. This is followed by 'Television Advertisement' (WRS=1927), 'Print Advertisement' (WRS=1504), 'Recommendations of Salespeople' (WRS=1347), 'Outdoor Advertisement' (WRS=1334) and 'Internet Advertisement' (WRS=1070) in that order.

For pre-paid consumers also, 'Recommendations of Known Users' (WRS=1560) has maximum influence in the selection of telecom service provider. This is followed by 'Television Advertisement' (WRS=1330), 'Print Advertisement' (WRS=1012), 'Outdoor Advertisement' (WRS=924), 'Recommendations of Salespeople' (WRS=902), and 'Internet Advertisement' (WRS=783). For post-paid consumers, again 'Recommendations of Known Users' (WRS=708) has maximum influence in the selection of telecom service provider. This is followed by 'Television Advertisement' (WRS=597), 'Print Advertisement' (WRS=492), 'Recommendations of Salespeople' (WRS=445), 'Outdoor Advertisement' (WRS=410), and 'Internet Advertisement' (WRS=290).

K-W statistics indicate that there is a significant difference between the pre-paid and the post-paid consumers with respect to the ranking towards the 'internet advertisement'. However, no significant difference between them has been observed with respect to the rankings of the other influencers.

Table 7 displays gender-wise Weighted Ranking Scores (WRS) of six influencers guiding the decision of consumers in selecting the telecom service provider.

**Table 6**  
**Gender-wise Weighted Rankings Scores (WRS) of Influencers in Selection of Telecom Service Provider**

Influencers	Male	Female	Kruskal-Wallis H Test	
			Statistics	P-Values
Recommendations of Known Users	1289	979	1.836	0.175
Recommendations of Salespeople	816	531	6.794	0.009*
Print Advertisement	874	630	0.592	0.442
Television Advertisement	1096	831	0.427	0.513
Outdoor Advertisement	748	586	1.754	0.185
Internet Advertisement	596	477	2.663	0.103

\* Significant at 0.01 level

The Table reveals that for male consumers, 'Recommendations of Known Users' (WRS=1289) has maximum influence in the selection of telecom service provider. This is followed by 'Television Advertisement' (WRS=1096), 'Print Advertisement' (WRS=874), 'Recommendations of Salespeople' (WRS=816), 'Outdoor Advertisement' (WRS=748), and 'Internet Advertisement' (WRS=596) in that order. For female consumers also, 'Recommendations of Known Users'

(WRS=979) has maximum influence in the selection of telecom service provider. This is followed by 'Television Advertisement' (WRS=831), 'Print Advertisement' (WRS=630), 'Outdoor Advertisement' (WRS=586), 'Recommendations of Salespeople' (WRS=531), and 'Internet Advertisement' (WRS=477).

K-W statistics indicate that there is a significant difference between the male and the female consumers with respect to the ranking towards the 'recommendations of salespeople'. However, no significant difference between them has been observed with respect to the rankings of the other influencers. Duration of Service Usage of the Current Telecom Service Provider

The duration of time for which the respondents have been using the services of their current telecom service provider has been divided into four categories, namely, 'less than a year', '1-3 years', '3-5 years' and 'more than 5 years'. Type of service-wise distribution of consumers based on duration of service usage has been shown in Table 8.

**Table 8**

**Type of Service-wise Distribution of Consumers with respect to Duration of Service Usage**

Duration of Service Usage	Type of Service		Total
	Pre-paid	Post-paid	
Less than a year	74 (23.9)	10 (7.1)	84 (18.7)
1-3 years	116 (37.4)	48 (34.3)	164 (36.4)
3-5 years	75 (24.2)	39 (27.9)	114 (25.3)
More than 5 years	45 (14.5)	43 (30.7)	88 (19.6)
<b>Total (N)</b>	<b>310</b>	<b>140</b>	<b>450</b>

Chi-Square value= 28.169, Significant at 5% level of Significance

The Table reveals that most of the consumers (36.4%) in this sample have been using the mobile phone services of their current service provider for '1-3 years'. This is followed by 25.3 per cent of consumers who have been using the mobile phone services for '3-5 years', 19.6 per cent of consumers who have been using the services for 'more than 5 years' and 18.7 per cent of respondents who have been using the services for 'less than a year'.

Type of service-wise analysis reveals that 37.4 per cent of pre-paid consumers have been using the mobile phone services of their current service provider for '1-3 years'. This is followed by respondents who have been using the mobile phone services of their current service provider for '3-5 years' (24.2%),

'less than a year' (23.9%), and 'more than 5 years' (14.5%). On the other hand, 34.3 per cent of the post-paid consumers have been using the mobile phone services of their current service provider for '1-3 years'. This is followed by 30.7 per cent of respondents who have been using the mobile phone services for 'more than 5 years', 27.9 per cent of respondents who have been using the services for '3-5 years' and 7.1 per cent of the respondents who have been using the services for 'less than a year'.

It may be seen from the above analysis that most of the pre-paid as well as post-paid consumers (37.4% and 34.3% respectively) have been using the services of their current service provider for '1-3 years'. However, only 14.5 per cent of pre-paid consumers have been using the services of their current service provider for 'more than 5 years' whereas 30.7 per cent of post-paid consumers have been using the services for 'more than 5 years'. Relatively more post-paid consumers, as compared to the pre-paid consumers, have been using the services of their current service provider for a longer duration. In order to examine whether significant differences exist between pre-paid and post-paid consumers as regards their duration of service usage, Chi-Square statistic has been applied and the following null hypothesis has been tested.

**H<sub>03</sub>** : There are no significant differences between pre-paid and post-paid consumers with respect to the duration of service usage.

The Chi-Square value shows that the null hypothesis is rejected. Statistically, there are significant differences between pre-paid and post-paid consumers with respect to the duration of service usage, at 5 per cent level of significance.

Gender-wise distribution of consumers based on the duration of service usage has been shown in Table 9.

**Table 9**  
**Gender-wise Distribution of Consumers with respect to Duration of Service Usage**

Duration of Service Usage	Gender		Total
	Male	Female	
Less than a year	55 (21.3)	29 (15.1)	84 (18.7)
1-3 years	83 (32.2)	81 (42.2)	164 (36.4)
3-5 years	73 (28.3)	41 (21.4)	114 (25.3)
More than 5 years	47 (18.2)	41 (21.4)	88 (19.6)
<b>Total (N)</b>	<b>258</b>	<b>192</b>	<b>450</b>

Chi-Square value= 28.169, Significant at 5% level of Significance

The Table reveals that in case of male consumers, 32.2 per cent have been using the mobile phone services of their current service provider for '1-3 years'. This is followed by respondents who have been using the mobile phone services of their current service provider for '3-5 years' (28.3%), 'less than a year' (21.3%), and 'more than 5 years' (18.2%).

In case of female consumers also, most of them (42.2%) have been using the mobile phone services of their current service provider for '1-3 years'. This is followed by respondents who have been using the mobile phone services of their current service provider for '3-5 years' (21.4%), 'more than 5 years' (21.4%), and 'less than a year' (15.1%).

It may be seen from the above analysis that in case of male as well as female consumers, the highest percentage of consumers (32.2% and 42.2% respectively) has been using the services of their current service provider for '1-3 years'. However, the percentage of female users (42.2%) is higher than that of male users (32.2%).

In order to examine whether the differences between male and female consumers as regards their duration of service usage are significant or not, Chi-Square statistic has been applied and the following null hypothesis has been tested.

**H<sub>04</sub>** : There are no significant differences between male and female consumers with respect to the duration of service usage.

The Chi-Square value shows that the null hypothesis is rejected. Statistically, there are significant differences, at 5 per cent level of significance, between male and female consumers with respect to the duration of service usage.

#### **Monthly Expenditure on the Mobile Phone Connection**

The monthly expenditure of consumers has been divided into four categories, namely, 'less than 500', '500-1000', '1000-1500' and '1500 and above' category. Type of service-wise distribution of consumers with respect to monthly expenses incurred by them on mobile phone has been shown in Table 10.

**Table 10**  
**Type of Service-wise Expenditure on the Mobile Phone Connection**

Monthly Expense Category	Type of Service		Total
	Pre-paid	Post-paid	
Less than 500	191 (61.6)	39 (27.9)	230 (51.1)
500-1000	95 (30.7)	61 (43.6)	156 (34.7)
1000-1500	19 (6.1)	23 (16.4)	42 (9.3)
1500 and above	5 (1.6)	17 (12.1)	22 (4.9)
<b>Total (N)</b>	<b>310</b>	<b>140</b>	<b>450</b>

Chi-Square value = 58.985, Significant at 5 % level of Significance

The Table reveals that a majority of consumers (51.1%) have monthly expenditure of mobile phone services as 'less than 500'. This is followed by 34.7 per cent of respondents who have their monthly expenses as '500-1000', 9.3 per cent of respondents whose monthly expenditure is '1000-1500', and 4.9 per cent of respondents who spend '1500 and above' on a monthly basis.

Type of service-wise analysis indicates that in case of pre-paid consumers, 61.6 per cent spend 'less than 500' per month on mobile phone services. This is followed by 30.7 per cent of respondents spending '500-1000' per month, 6.1 per cent spending '1000-1500' per month and 1.6 per cent of respondents who spend '1500 and above'. In case of post-paid consumers, 43.6 per cent have their monthly expenditure as '500-1000'. This is followed by respondents who spend 'less than 500' per month (27.9%), '1000-1500' per month (16.4%) and '1500 and above' on a monthly basis (12.1%).

It may be seen from the above analysis that in case of pre-paid consumers, the highest percentage of consumers (61.6 %) has their monthly expenditure as 'less than 500'. This may be because of the reason that pre-paid consumers call less and are more price-sensitive. In case of post-paid consumers, the highest percentage of consumers (43.6%) has their monthly expenses as '500-1000'. 72.1% post-paid consumers as compared to just 38.4% pre-paid consumers have their monthly expenditure greater than 500. It may be because post-paid consumers tend to make longer or more frequent calls and may not be as price-sensitive as pre-paid consumers.

In order to examine whether significant differences exist between pre-paid and post-paid consumers as regards their monthly expenditure, Chi-Square statistic has been applied and the following null hypothesis has been tested.

H0-5: There are no significant differences between pre-paid and post-paid consumers with respect to monthly expenditure.

The Chi-Square value shows that statistically, there are significant differences, at 5 per cent level of significance, between pre-paid and post-paid consumers with respect to monthly expenditure, thus rejecting the null hypothesis.

Gender-wise distribution of consumers with respect to the monthly expenditure incurred by them on mobile phone services has been shown in Table 11.

**Table 11**  
**Gender-wise Expenditure on the Mobile Phone Connection**

Duration of Expense Category	Gender		Total
	Male	Female	
Less than 500	119 (46.1)	111(57.8)	230 (51.1)
500-1000	93 (36.1)	63 (32.8)	156 (34.7)
1000-1500	28 (10.9)	14 (7.3)	42 (9.3)
1500 and above	18 (7.0)	4 (2.1)	22 (4.9)
<b>Total (N)</b>	<b>258</b>	<b>192</b>	<b>450</b>

Chi-Square value = 10.162, Significant at 5 % level of Significance

The Table reveals that in case of male consumers, 46.1 per cent spend 'less than 500' per month on mobile phone services. This is followed by 36.1 per cent of respondents spending '500-1000' per month, 10.9 per cent whose monthly expenses are '1000-1500' and 7.0 per cent of respondents who have their monthly expenses as '1500 and above'.

In case of female consumers, 57.8 per cent have their monthly expenditure as 'less than 500'. This is followed by respondents spending '500-1000' per month (32.8%), '1000-1500' per month (7.3%) and '1500 and above' (2.1%).

It may be seen from the above analysis that 57.8 per cent of female consumers as compared to 46.1 per cent of male consumers have their monthly expenditure as 'less than 500'. Seven per cent of male consumers versus 2.1 per cent of female consumers have their monthly expenditure greater than 1500.

In order to examine whether the differences between male and female consumers as regards their monthly expenditure are significant or not, Chi-Square statistic has been applied and the following null hypothesis has been tested.

$H_{06}$  : There are no significant differences between male and female consumers with respect to monthly expenditure.

The Chi-Square value shows that the null hypothesis is rejected. There are significant differences, at 5 per cent level of significance, between male and female consumers with respect to monthly expenditure.

## **CONCLUSIONS AND IMPLICATIONS**

Most of the consumers in the sample have been found to be using the services of 'Airtel' or 'Vodafone'. This is followed by 'BSNL', 'Idea', 'Reliance', 'Docomo', 'Tata Indicom', 'Aircel' and 'Videocon'. A majority of the respondents (68.9%) are users of pre-paid mobile services while the remaining 31.1 per cent are users of post-paid services. Male consumers constitute 57.3% of the sample while the remaining 42.7% comprises of female consumers.

Most of the pre-paid respondents, irrespective of their gender, have stated that 'Freedom from bills and billing problems' is the single most important reason for choosing the pre-paid services for their mobile phone connections. This is followed by other reasons, namely, 'Monthly expense management', 'Lower rates for calls and SMS' and 'Lower internet rates'. Most of the post-paid respondents, irrespective of their gender, have expressed that 'Unlimited calls unlike pre-paid option' is the single most important reason for choosing the post-paid services for their mobile phone connections. This is followed by other reasons, namely, 'Wider choice of tariff plans', 'Credit-Payment after usage' and 'Recommendations of known users'. In the light of above, the telecom service providers can decide on the appropriate promotion-mix for each type of service, by understanding the rationale behind the choice of the respective service.

It has been observed that most of the consumers, irrespective of gender and type of service, stated that 'Recommendations of Known Users' has maximum influence in selection of the telecom service provider. This is followed by 'Television Advertisement' and 'Print Advertisement'. Telecom service providers, therefore, need to focus on the existing consumers so that prospects experience positive word of mouth and referrals, especially from known users and other opinion leaders, since their recommendations matter the most in selection of the service provider. It is important for any organization to focus on existing customers and build better relationship with them before committing huge resources to potential customers. Word of mouth publicity through the existing consumers is faster, more cost-effective than advertising and can do wonders in attracting potential customers. They can give next priority to advertisement in television and print media.

A majority of the respondents have been found to be using the mobile

phone services of their current service provider for 1-5 years. More post-paid consumers, as compared to pre-paid consumers, have been using the services of their current service provider for more than three years. A relatively higher percentage of female consumers, as compared to male consumers, have been found to be using the services for 'more than 5 years'. A proportionately higher percentage of male consumers, as compared to female consumers, have been noted to be using the services for 'less than a year'. The telecom service providers, therefore, need to focus on the pre-paid and the male consumers who seem to be using the services for a shorter duration as compared to the post-paid and female consumers respectively. They need to devise ways to increase the duration of service usage of these consumers through better service quality and retention initiatives.

It has been observed that an overwhelming majority of consumers (more than 85%) spend less than 1000 per month on mobile phone services. Most of these spend 'less than 500' as compared to '500-1000' per month. Very few have their monthly expenses in '1500 and above' category. Majority of the pre-paid consumers spend less than 500 per month on mobile phone services. On the other hand, majority of the post-paid consumers have monthly expenses greater than 500, with most of them spending in the '500-1000' range. A higher percentage of post-paid consumers, as compared to the pre-paid subscribers, have their monthly expense in the '1500 and above' category. A higher percentage of female consumers, as compared to male consumers, spend 'less than 500' per month on mobile phone services. However, the percentage of male consumers is relatively higher, as compared to female subscribers, in the '500-1000', '1000-1500' and '1500 and above' categories. The telecom service providers, therefore, need to look at specific ways, including customized tariff plans, to make the pre-paid and female consumers increase their usage and hence monthly spend.

On the basis of foregoing analysis regarding the usage behavior of consumers of mobile phone services, the telecom service providers need to focus on the right promotion-mix for each type of service. They should also pay more attention to the existing consumers whose positive recommendations matter the most to prospects while selecting the service provider. They need to take special care of the pre-paid and the male consumers to increase the duration of their service usage. Tailor-made offerings need to be offered to the pre-paid and female consumers to increase their usage of the mobile services and consequently the revenues.

## LIMITATIONS OF THE STUDY

The scope has been limited to the Punjab Telecom Circle which may differ from other telecom circles in size, culture, consumer demographics and psychographics, consumer expectations and behavior. The study has been limited to a study of five telecom districts which represent around 70-80% of the mobile phone consumer base of the Punjab circle, yet the sample may not fully reflect the perceptions of the total population. The sampling technique used was convenience sampling and the respondents covered those consumers who were willing to spare time to answer the questionnaire. Consumers of all demographic variables may not have been equally represented.

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## **Newly Proposed Mathematical Model for Solving RCPSP**

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### **Abstract**

Project scheduling has been a subject of wide interest since last few decades. Several algorithms have been proposed to schedule the activities of a project. Scheduling of activities considering the resource constraints along with precedence relations gives rise to a class of problems called the RCPSP. In this paper the authors propose an algorithm to solve RCPSP considering various parameters such as maximum remaining path length, delay in projects due to the activities waiting for resources, resources available versus resources required, priority of the project etc. There occurs a decision point every time when the resources required by the starting activities are more than the existing resources. At every decision point a set of competing activities is formed and the winning activities are allocated the resource. In the proposed algorithm, at each decision point, those activities are also considered whose preceding activities are near completion along with the activities whose predecessors have finished as is done in most of the existing algorithms. This might give a preference to a critical activity whose preceding activity is near completion which otherwise would be ignored at this decision point and hence the project could be delayed. The algorithm takes care of the shifting criticality as the critical path changes with the allocation of conflicting resources.

### **Key Words**

Project scheduling, RCPSP, schedule performance index (SPI), maximum remaining path length (MRPL).

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## INTRODUCTION

Scheduling forms the basis of any project and hence plays an important role in industries like production, software, construction etc. Scheduling of any project involves decision making at two levels: once to schedule the activities according to precedence relations and then according to the availability of resources. Using CPM a schedule is developed which does not consider any resource constraints, hence needs to be reframed giving rise to resource constraint project scheduling problems. This research aims at developing one such algorithm for allocation of limited resources to competing activities.

RCPSP has become a standard problem in project scheduling and a large research has been done on it. Heuristic methods have been applied to allocate constrained resources. Tarun et al. (2004, 2011) have proposed various methods for the calculation of critical path by allocating constrained resources to competing activities. They have used fuzzy numbers and heuristics, considering a few assumptions as the activities being non pre-emptive, fixed resource requirement and availability, fixed precedence relationship with an objective of minimization of expected project completion time. Considering the uncertainties in a project, they have developed an algorithm that takes care of the uncertainties of the activities which have not been scheduled at a particular point of time. At every decision point, out of the set of competing activities, the subset satisfying resource constraints and having maximum criticality is given the preference. Tarun et al. (2011) also developed a non-recursive heuristic called resource time ratio exponent technique to evaluate SPI for RCPSP to obtain minimum make span schedule. They used it to solve Kolisch and Sprecher benchmark problems and found the results to be better than other methods.

A fundamental assumption in RCPSP is that the activities are non pre-emptive. Francisco Ballestín et al. (2008) conclude by the survey on papers dealing with scheduling of the pre-emptive activities that it has little effect on project length when constant resource availability levels are defined. They have developed a generalization of RCPSP where a maximum of one interruption per activity is allowed and can further be applied to more general pre-emptive problems.

Sonke Hartmann et al. (2010) define RCPSP as a basic model which has assumptions that are too restrictive for many practical applications and hence have presented various extensions of the basic RCPSP based on the structure of the problems. They have generalised the concepts of the activity, the precedence relations and the resource constraints and have discussed alternate approaches for scheduling multiple projects.

Jan We.glarz et al. (2011) presented a survey on the single-project problems which are deterministic, single-objective, and multi-mode.

He'di Chtourou et al. (2008) have presented an algorithm for robust resource-constrained project scheduling in two in two phases. In the first phase they have presented an algorithm that solves RCPSP for minimising the make span only using a priority-rule-based heuristic, and the second phase consists of an algorithm solved for maximizing the schedule robustness while considering the make span obtained in the first stage.

There always exists a mismatch between the proposed schedule and actual implementation of the project. Oya I. Tukul et al. (2006) proposed to tackle this by inserting buffers at various stages of the project schedule. Luong Duc Long et al. (2008) developed a fuzzy critical chain method for RCPSP. They added a buffer only at the end of the schedule and updated the schedule according to the extent to which the project buffer is consumed. They calculated the size of project buffer by computations with fuzzy numbers.

Mahdi Mobini et al. (2011) adopted a different approach, they used a meta heuristic algorithm called Artificial Immune Algorithm (AIA), which is inspired by the vertebrate immune system to solve the RCPS problem considering make span minimisation as the objective. Their computational results show that the proposed algorithm has competitive results in comparison with the existing algorithms, hence inspire for solving real-world problems. Another approach using a meta heuristic algorithm is presented by Siamak Baradaran et al. (2010). Considering the resource constrained project scheduling problem as an NP hard model, they used a meta heuristic algorithm namely the hybrid scatter search. They applied the algorithm at each decision point where more than one activity awaits to be operated but resource required is scarce. They used numerical example to explain it.

Pedro Godinho et al. (2012) proposed an adaptive model for multi-mode project scheduling under uncertainty. They assumed that there is a due date for concluding the project and a tardiness penalty for failing to meet this due date and that several distinct modes may be used to undertake each activity. They defined scheduling policies based on a set of thresholds and proposed a procedure based on the electromagnetism heuristic for choosing scheduling policy. They concluded that when the different modes have different characteristics and there is a reasonable difference between the average duration of the project and the due date, the cost advantage of the adaptive policy becomes very significant.

This paper proposes an algorithm for project scheduling under constrained resources considering uncertainty in the estimated activity durations which are

assumed to be normally distributed. The proposed algorithm produces an effective schedule by allocating the limited resources at each decision point so as to ensure optimal allocation of resources leading to minimal project duration. It aims at developing a schedule for multiple projects running simultaneously. An algorithm has been developed by Tarun et al. to solve RCPSP based on SPI (Schedule Performance Index). In his algorithm, the activities competing at any decision point includes all those activities whose predecessors have finished. But in the proposed algorithm, even those activities are considered among the competing whose predecessors are about to finish. The 'about to finish' activities include those activities whose LST is less than or equal to the finish time of the activities ready to start. Along with the concept of maximum remaining path length and ratio of resource required and resource available as given by Tarun et al. the proposed algorithm also considers delay in the project due to an activity if it does not get the resource. Another factor added in the expression of SPI in the proposed algorithm is considering the profits fetched by a project. Moreover, the competing subsets are formed based on the resource they require rather than the completion of their predecessors.

Section 2 of the paper presents the notations used in the algorithm. The problem is defined in section 3 and section 4 explains the proposed algorithm. Comparison between the schedule obtained through the algorithm proposed by Tarun et al. (2007) and through the algorithm proposed in this paper, with the help of a hypothetical case study is presented in Section 5. Section 6 gives the discussion of results and future scope.

## NOTATIONS

- $u_j$  : Optimistic time required for activity  $j$ .  
 $b_j$  : Pessimistic time required for activity  $j$ .  
 $\sigma_j$  : The standard deviation of time for activity  $j$ .  
 $j$  : Activity number of the project : 0, 1, 2, 3, ...,  $n + 1$  where 0 and  $n + 1$  are dummy start and dummy end nodes respectively.  
 $t_j$  : Duration of activity, a random variable.  
 $M_j$  : Maximum remaining path length of activity  $j$ .  
 $A_j$  : Set of activities on the path of maximum length starting from activity  $j$ .  
 $A_0$  : Set of activities on the critical path.  
 $S_j$  : Net standard deviation of the path associated to  $M_j$  given by

$$\left[ \sum_{j \in A_j} \sigma_j^2 \right]^{\frac{1}{2}}.$$

- $r_{jk}$  : Renewable resource of type  $k$  required to perform activity  $j$ .  
 $R_k$  : Total available resource of type  $k$ .  
 $T$  : Project completion time without resource constraints. This is the critical path length of the project based on the expected value of the time taken by each activity.  
 $S$  : Standard deviation of the critical path.  
 $\overline{R}_K$  : Minimum resource of type  $k$  required to complete the project in time  $T$  assuming no other  $K - 1$  resource constraints.  
 $T_k$  : Time taken (based on the expected value of the activity time) to complete the project considering only the  $k^{\text{th}}$  resource constraint and no other resource constraints.  
 $i$  : Number of a decision point. A decision point occurs either at the beginning of the project or when at least one of the running activities is completed.  
 $R_{ik}$  : Resource of type  $k$  available at decision point  $i$ .  
 $C_i$  : The set of activities which are ready to be scheduled in decision point  $i$ . This is the set of activities, which satisfies the precedence relationship.  
 $d$  : Delay in project if the activity is made to wait.  
 $h_g$  : Preference value of the project  $g$ .  
 $P_g$  : Profit through the project  $g$ .  
 $Z_{im}$  : The value of SPI of activity  $m$  in cycle  $i$ .  
 $Z_j$  : The value of SPI of activity  $j$ .

## PROBLEM DESCRIPTION

The algorithm proposed in this paper is for the class of problems with uncertain activity durations and limited resources. The activity durations are estimated based on previous experience and also, at times, on nature of the manager. It depends on the individual how much safety time he adds to the duration of each activity. Since the proposed activity duration may not exactly match the actual time the activity finishes in, lower and upper bound is considered for the duration of each activity. The activity durations are assumed to be normally distributed. The problem under consideration is of time minimization with optimal resource allocation having the following properties :

1. A well-defined set of activities.
2. Random activity duration which is normally distributed and is based

- on lower and upper bounds.
- 3. Fixed precedence relationships.
- 4. Fixed requirement and availability of resources considering only renewable resources.
- 5. Pre-emption is not allowed.
- 6. Expected outcome of projects in terms of profit or attaining more projects is known.

### THE PROPOSED ALGORITHM

The problem deals with the optimal allocation of resources to activities at every decision point i.e. wherever a resource constraint occurs. The proposed algorithm allocates the resources according to a priority rule which is followed at every decision point. A decision point occurs at the beginning of the project or when any activity finishes. One or more decision points occur for each limited resource. At every decision point, a set of competing activities is formed which contains the activities requiring a particular resource and whose preceding activities are finished or are about to finish. Among the activities whose preceding activities are about to finish, those activities are considered whose LST is less than the finishing time of the activities ready to start. The priority rule to decide the winning activity for allocation is based on the following parameters :

1. Maximum remaining path length (Moder et al., 1983).
2. Delay in the project due to an activity forced to wait.
3. Ratio of resource requirement to resource availability.
4. Preference given to any project based on its expected profit.

#### Maximum Remaining Path Length and Delay Factor

The maximum remaining path length,  $M_j$  of a particular activity is the length of the longest remaining path starting from that activity. The set of activities on this path is denoted by  $A_j$ . To take care of the uncertainty in activity durations, the standard deviation multiplied to  $n$  (the weight age given to the standard deviation) of each activity is added to the length of the remaining path of the activity. It is given by  $M_j = \sum_j A_j t_j + n S_j$ . A delay factor  $d$  is added to  $M_j$ . To give a preference to the activities on the critical path at a decision point,  $M_j + d$  is divided by  $T + nS$ . When  $d$  is zero, this ratio is always less than one and is higher for the activities on the critical chain, hence giving them a preference. The parameter  $n$  indicates the weightage given to the standard deviation i.e. the uncertainty in activity durations. The ratio is raised to the power  $q$  which takes care of the overall criticality of the project.  $q$  is measured

as the ratio of  $\max T_k$  to that of  $T$ .  $T_k$  represents the time taken by the project to finish considering only  $k^{\text{th}}$  type of resource constraint and no other  $(k - 1)^{\text{th}}$  resource constraints. It can be calculated using the normal procedure for calculating CPM considering this resource constraint as another precedence relation.

A factor  $d$  called the delay factor, added to  $M_j$  introduces the delay in the project if the activity in question is forced to wait for the resource. At times, the MRPL for an activity may be longer and hence a higher SPI, but there may exist a large slack in the remaining path and the other competing activity might have a smaller MRPL along with a small slack. Here if the resource is allocated to the activity with smaller slack project may not be delayed at all but if the allocation is done the other way, the project may get delayed because of smaller slack of the waiting activity. This would be applicable for the non-critical paths but it has to be considered because non-critical paths may become critical after resource allocation.

#### **Ratio of Resource Requirement to Resource Availability**

Preference is given to the activity requiring larger units of resources. It

is measured by the ratio  $\frac{r_{jk}}{R_{jk}}$  i.e. ratio of the resource available to the resource

required to complete the project in the minimum possible time. This factor is raised to the power  $P_k$  which represents the probability of the resource crunch of that type of resource during the whole time span of the project and is given

$$\text{by } P_k = \frac{\overline{P_k}}{R_{jk}} .$$

#### **Preference Given to Any Project Based on its Expected Profit**

Making money out of the project is the ultimate aim of the project manager hence preference is given to the project which fetches larger profit or

which can fetch more projects. For this a factor given by  $\frac{h_g^p g}{\sum_1^m h_g^p g}$  is introduced

in the expression for SPI. Here  $m$  denotes the number of projects running parallel and sharing resources. This ratio gives the weight to the project. This factor would be higher for projects bearing higher weightage since the denominator remains constant.

Hence the final expression for SPI is given by

$$Z_j = \left[ \left( \frac{d + m_j + nS_j}{T + nS} \right)^q \frac{h_g p_g}{\sum_1^m h_g p_g} \left( \frac{r_{jk}}{R_{jk}} \right)^{R_k} \right] \quad (4.1)$$

The activity with maximum value of  $Z_j$  is allocated the resource first of all, followed by the one with lesser value of  $Z_j$  and so on till the resource is completely exhausted.

### Remark

The proposed algorithm will be known as Pari RCPS. The name has been coined in the memory of beloved daughter Late Ms. Pari of second author.

### COMPUTATIONAL PROCEDURE

1. Calculate the critical path using CPM and the standard deviation of the critical path using most likely time of the activities.
2. Calculate the values of  $T_k$ ,  $R_{ik}$ ,  $P_k$  and  $q$ .
3. At every decision point, calculate the value of  $Z_j$  for all the competing activities.
4. Allocate the resources to the activities in the decreasing order of  $Z_j$ .

### CASE STUDY

Mr. X owns a production company. He is working on two projects  $P_1$  and  $P_2$  simultaneously. If  $P_1$  finishes in time his company would get multiple projects, although  $P_2$  is a project of another regular client. Hence  $P_1$  is more important for Mr. X. Activity durations, precedence relations and resources to be used in projects  $P_1$  and  $P_2$  are given in tables below.

**Table 1**

Acti- vity	Project 1				Acti- vity	Project 2			
	Duration		Succe- ssor	Resource required		Duration		Succe- ssor	Resource required
	a <sub>j</sub>	b <sub>j</sub>				a <sub>j</sub>	b <sub>j</sub>		
0	–	–	1,2,3,4,5	–	0	–	–	1,2,3,4	–
1	37	43	6,7	R1	1	33	37	6,7,8	R1
2	32	38	10,11	R2	2	24	26	9	R2
3	8	16	9	R3	3	30	40	5	R1
4	32	44	8	R4	4	27	33	6,7,8	R3
5	8	12	10,11	R5	5	31	39	15	R3
6	14	18	10,11	R5	6	14	26	13,10	R4
7	9	15	9	R4	7	12	16	11,14	R4
8	14	22	10,11	R3	8	12	18	15	R3
9	7	13	13	R5	9	22	38	13	R3
10	13	17	13	R5	10	4	16	12	R5
11	7	17	13	R5	11	9	15	17	R6
12	26	34	13	R4	12	6	10	17	R6
13	–	–	–	–	13	9	11	17	R6
					14	7	13	17	R5
					15	7	11	17	R5
					16	23	27	17	R2
					17	–	–	–	–

Since project 1 would fetch multiple projects to Mr. X, he has fixed the value of h=2 for project P1 and h=1 for project p2 which is any routine project. P1 would gain Mr. X a profit of 10 lakhs and P2 would fetch him 8 lakhs as estimated by his accounts personnel. Mr. X owns one unit each of resources R2, R3, R5 and R6 and two units each of R1 and R4. Assuming the activity durations to be normally distributed, the most likely activity durations and the standard deviations is calculated as given in Table 2.

Table 2

Project 1			Project 2		
Activity	Duration ( $t_j$ ) (most likely)	Standard Deviation	Activity	Duration ( $t_j$ ) (most likely)	Standard Deviation
0	–	–	0	–	–
1	40	1	1	35	0.667
2	35	1	2	25	0.33
3	12	1.33	3	35	1.667
4	38	2	4	30	1
5	10	0.667	5	35	1.33
6	16	0.667	6	20	2
7	12	1	7	14	0.667
8	18	1.33	8	15	1
9	10	1	9	30	2.667
10	15	0.667	10	10	2
11	12	1.667	11	12	1
12	20	1.33	12	8	0.667
13	–		13	10	0.33
			14	15	1
			15	9	0.667
			16	25	2
			17	–	–

Using the most likely activity duration, the EST, LST, EFT, LFT is calculated as given in table 3 and table 4 and the critical paths are found as shown in fig 1 and fig 2 respectively for Project 1 and Project 2.

Table 3

Activity	1	2	3	4	5	6	7	8	9	10	11	12	13
EST	0	0	0	0	0	40	40	38	52	56	56	71	91
EFT	40	35	12	38	10	56	52	56	62	71	68	91	91
LST	0	21	69	0	46	40	40	38	81	56	79	71	91
LFT	40	56	81	38	56	56	52	56	91	71	91	91	91

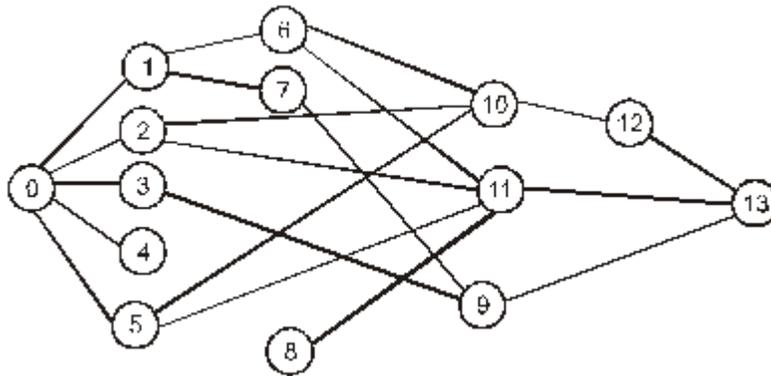
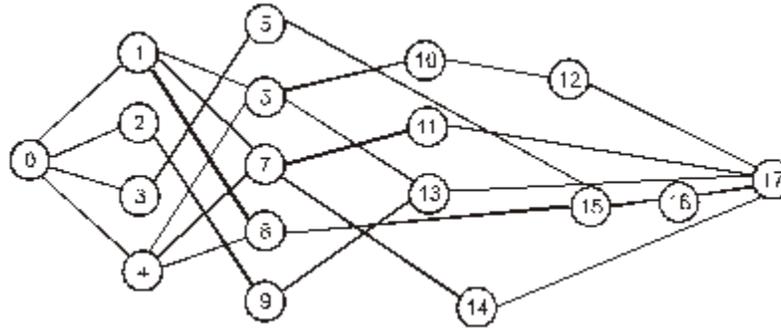


Figure 1 : Network Diagram for Project 1

Table 3

Activity	EST	EFT	LST	LFT
1	0	35	20	55
2	0	25	39	64
3	0	35	0	25
4	0	30	25	55
5	35	70	35	70
6	35	55	66	86
7	35	49	78	92
8	35	50	55	70
9	25	55	64	94
10	55	65	86	96
11	49	61	92	104
12	65	73	96	104
13	55	73	86	104
14	49	59	94	104
15	70	79	70	79
16	79	104	79	104
17	-	-	-	-



**Figure 2 : Network Diagram for Project 2**

The schedules obtained as shown in Fig. 1 and Fig. 2 give the basic schedule where the resource availability is not considered. Wherever the availability of resources is constrained, a decision needs to be taken for the allocation of resource. This paper uses two criterions for allocation: one using the proposed algorithm and the other using the algorithm proposed by Tarun et al. which has been modified to develop the proposed algorithm. First we solve the problem of resource allocation using the proposed algorithm.

At the starting point of the project resource R1 is required by A1 of P1, A1 of P2 and A3 of P2. So this is a decision point. To decide the activities for allocation, SPI is calculated for each activity and the one with highest value of SPI gets the resource. The values of SPI as calculated according to equation (4.1), for A1 of P1, A1 of P2 and A3 of P3 are 0.499, 0.0994 and 0.1419 respectively. Hence the winning activities would be A1 of P1 and A3 of P3, as two units of R1 are available. Since A1 of P2 will have to wait till R1 gets free, all the activities succeeding A1 of P2 will also get postponed. Hence the EST, LST, EFT and LFT need to be rescheduled for all those activities. Simultaneously, a decision would be taken for the allotment of R2 to A2 of P1 or A2 of P2, and R3 for A3 of P1 or A4 of P2. Since at the starting time, only A4 of P1 requires R4, it gets allocated to A4. Similarly R5 gets allocated to A5 of P1. As all these allocations are done, the EST, LST, EFT and LFT get rescheduled for the activities which have to wait and all their succeeding activities. The next decision points are identified according to revised values of EST, LST, EFT and LFT. The next decision points and the winning activities are summarised in Table 4. In the column of competing activities, the highlighted activities are the winning activities.

**Table 5**  
Activity Along With Finishing Times

R1 (2 units)	R2 (1 unit)	R3 (1 unit)	R4 (2 units)	R5 (1 unit)	R6 (1 unit)	Activity finished	time	Competing activities
A1P1(40) A3P2(35)	A2P1(35)	A4P2 (30)	A4P1(38)	A5P1(10)	-	-	0	R1 : A1P1,A3P2, A1P2 R2 : A2P1, A2P2 R3 : A4P2, A3P1
A1P1(40) A3P2(35)	A2P1(35)	A4P2 (30)	A4P1(38)			A5P1	10	-
A1P1(40) A3P2(35)	A2P1(35)		A4P1(38)			A4P2	30	R3 : A3P1, A8P1
A1P1(40) A1P2(70)	A2P2(60)		A4P1(38)			A2P1, A3P2	35	R1 : A1P2
A1P1(40) A1P2(70)	A2P2(60)	A8P1 (56)	A7P1(52)			A4P1	38	R4 : A7P1
A1P2(70)	A2P2(60)	A8P1 (56)	A7P1(52)	A6P1(56)		A1P1	40	-
A1P2(70)	A2P2(60)	A8P1 (56)		A6P1(56)		A7P1	52	R4 : A6P2, A7P2, A12P
A1P2(70)	A2P2(60)	A3P1 (68)		A10P1 (71)		A6P1 A8P1	56	R3 : A3P1, A9P2 R5 : A9P1, A10P1, A11P1
A1P2(70)	A5P2(95)	A3P1 (68)		A10P1 (71)		A2P2	60	R2 : A5P2
A1P2(70)	A5P2(95)	A8P2 (85)		A10P1 (71)		A3P1	68	R3 : A8P2, A9P2
	A5P2(95)	A8P2 (85)	A6P2(90)	A10P1 (71)		A1P2	70	-

Contd. Table 5

A5P2(95)	A8P2 (85)	A6P2(90), A12P1(91)	A11P1 (83)	A10P1	71	R5 : A9P1, A11P1
A5P2(95)	A8P2 (85)	A6P2(90), A12P1(91)	A9P1(93)	A11P1	83	R5 : A9P1, A14P2
A5P2(95)	A9P2 (115)	A6P2(90), A12P1(91)	A9P1(93)	A8P2	85	R3 : A9P2
A5P2(95)	A9P2 (115)	A7P2(104), A12P1(91)	A9P1(93)		90	R4 : A7P2
A5P2(95)	A9P2 (115)	A7P2(104)	A9P1(93)	A12P1	91	-
A5P2(95)	A9P2 (115)	A7P2(104)	A10P2 (103)	A9P1	93	R5 : A14P2, A10P2
	A9P2 (115)	A7P2(104)	A10P2 (103)	A5P2	95	R2 : A16P2
	A9P2 (115)	A7P2(104)	A15P2 (114)	A10P2	103	-
	A9P2 (115)			A12P2 (111)		
	A9P2 (115)		A15P2 (114)	A7P2	104	-
	A9P2 (115)		A15P2 (114)	A12P2 (111)		
	A9P2 (115)		A15P2 (114)	A11P2 (123)	111	-
A16P2(139)	A9P2 (115)		A14P2 (124)		114	-
A16P2(139)			A14P2 (124)		115	-
A16P2(139)					124	-
					139	-

**Table 6**  
Activity Along With Finishing Times

R1 (2 units)	R2 (1 unit)	R3 (1 unit)	R4 (2 units)	R5 (1 unit)	R6 (1 unit)	Activity finished	time	Competing activities
A1P1(40) A3P2(35)	A2P1(35)	A4P2 (30)	A4P1(38)	A5P1(10)	-	-	0	R1 : A1P1,A3P2, A1P2 R2 : A2P1, A2P2 R3 : A4P2, A3P1
A1P1(40) A3P2(35)	A2P1(35)	A4P2 (30)	A4P1(38)			A5P1	10	-
A1P1(40) A3P2(35)	A2P1(35)	A3P1 (42)	A4P1(38)			A4P2	30	R3 : A3P1
A1P1(40) A1P2(70)	A5P2(70)	A3P1 (42)	A4P1(38)			A2P1, A3P2	35	R1 : A1P2 R2 : A2P2, A5P2
A1P1(40) A1P2(70)	A5P2(70)	A3P1 (42)	A7P1(52)			A4P1	38	R4 : A7P1
A1P2(70)	A5P2(70)	A3P1 (42)	A7P1(52)	A6P1(56)		A1P1	40	-
A1P2(70)	A5P2(70)	A8P1 (60)	A7P1(52)	A6P1(56)		A3P1	42	R3 : A8P1
A1P2(70)	A5P2(70)	A8P1 (60)		A6P1(56)		A7P1	52	R4 : A6P2, A7P2, A12P1
A1P2(70)	A5P2(70)	A8P1 (60)		A10P1 (75)		A6P1	56	R5 : A9P1, A10P1, A11P1
A1P2(70)	A5P2(70)	A9P2 (90)		A10P1 (75)		A8P1	60	R3 : A9P2
	A2P2(95)	A9P2 (90)	A6P2(90) A7P2(84)	A10P1 (75)		A1P2, A5P2	70	R2 : A2P2

Contd. Table 6

A2P2(95)	A9P2 (90)	A6P2(90) A7P2(84)	A11P1(87)	A10P1	75	R5 : A11P1, A9P1
A2P2(95)	A9P2 (90)	A6P2(90), A12P1(104)	A11P1(87)	A7P2	84	R4 : A12P1
A2P2(95)	A9P2 (90)	A6P2(90)A12 P1(104)	A14P2(97)	A11P1	87	R5 : A9P1, A14P2
A2P2(95)	A8P2 (105)	A12P1(104)	A14P2(97)	A6P2, A9P2	90	R3 : A8P2
	A8P2 (105)	A12P1(104)	A14P2(97)	A2P2	95	—
	A8P2 (105)	A12P1(104)	A14P2(97)	A11P2	96	R6 : A13P2
	A8P2 (105)	A12P1(104)	A10P2(107)	A14P2	97	R5 : A9P1, A10P2
	A8P2 (105)		A10P2(107)	A12P1, A13P2	104	
			A10P2(107)	A8P2	105	
			A9P1 (117)	A10P2	107	R5 : A9P1, A15P2
			A9P1 (117)	A12P2	115	
			A15P2 (126)	A9P1	117	R5 : A15P2
A16P2(151)				A15P2	126	
				A16P2	151	

Next, the scheduling is done using the algorithm given by Tarun et al. The allocation at various decision points is summarised in Table 6. Here SPI is calculated using the expression :

$$Z_m = \prod_{k=1}^k \left( \frac{\sum_{j \in c_{im}} r_{jk}}{l_{im}} \right)^{pk} \cdot \frac{1}{l_{im}} \cdot \sum_{j \in c_{im}} \left( \frac{M_j + MS_j}{T + MS} \right)^q \quad (5.1)$$

Where  $c_{im}$  is the subset  $m$  of the set  $C_i$  that can be formed taking as many activities as possible without violating any resource constraint,  $m = 1, 2, 3, \dots, M$ .  $l_{im}$  denotes the number of activities in the subset  $C_{im}$  and  $Z_m$  is the value of SPI of subset  $m$  in cycle  $i$ .

## RESULTS AND DISCUSSIONS

The schedule obtained in Table 5 finishes the Project 1 at 93 units and project 2 at 139 units while the one in Table 6 finishes Project 1 at 117 units and project 2 at 151 units, hence extending the projects by 25.8% and 8.63% respectively.

For every activity there exists an interval in which the starting time falls, starting from EST to LST. Starting the activity at EST provides a larger slack and hence absorbs some delays but starting the activity at LST would decrease WIP and may lead to resource levelling in some cases. Here lies the future scope to this problem. An optimal starting time would give a more efficient schedule by reducing the WIP time where applicable and increasing the slack, hence reducing the delay caused due to resource constraint where possible.

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## **India's Trade with SAARC Countries Problems and Prospects**

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### **Abstract**

The paper is an attempt to analyse the growth and structure of India's merchandise trade with SAARC countries. The various trends and changes in India's foreign trade with SAARC as a single unit and with individual member countries of SAARC have been analysed over the period from 2000-01 to 2009-10. An attempt has been made to present a complete picture of India's foreign trade with these countries. The analysis made is of comparative nature in the sense that the trade with SAARC as a single unit has been examined and compared vis-à-vis the overall foreign trade of India. In order to make it more comprehensive and manageable, the time-series information regarding the overall foreign trade of India, trade with SAARC and with individual SAARC countries has been presented simultaneously in tabular forms in relation to exports, imports and balance of trade, etc. Moreover, for the detailed analysis of trade, some trade related indices such as Trade Intensity Index, Concentration Index, Intra-Industry Trade Index (IITI) and Regional Orientation Index (ROI) have also been computed. Lastly, study suggests some policy implications for strengthening trade relations between India and SAARC countries and making SAFTA a success.

### **Key Words**

SAARC, UNO, WTO, SAFTA, SAPTA

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### **INTRODUCTION**

Regional economic cooperation has been found to be an important engine of growth by developing countries all over the world. Developing countries in

Southeast Asia, Latin America, Southern Africa have launched programmes aiming at regional economic integration (RIS, 1990). The growth of regional trade blocs has been seen as one of the major developments in international relations in recent years. Virtually all countries are members of a bloc, and many belong to more than one. In fact, it is argued that trade liberalisation and regional economic integration can help a region to increase intra-regional trade by exploring the size of the market. This may, in turn, yield efficiency and bring benefits not only by exploration of economies of scale but also by dynamic and upward shifts in production function. By exposure to a regional market, previously shattered domestic firms become more competitive and gain the confidence to enter into global competition. Driven towards integration by the pressure of economic interest of the region, seven South Asian countries- Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka formed the South Asian Association for Regional Cooperation (SAARC) in 1985. Later on, in 2007, Afghanistan became eighth member of SAARC (Ali and Talukder, 2009). Recognising the need of trade and investment flows in the process of regional economic integration, SAARC member countries formed SAARC Preferential Trading Arrangement (SAPTA) in 1993. The decision to transform SAPTA into South Asian Free Trade Area (SAFTA) was made in 2004 but it got implemented in 2006 (Ratna and Sidhu, 2008). This agreement has come in the wake of a bilateral FTA agreement between India and Sri Lanka in 1998 that became operational in 2000. Besides Sri Lanka, India has bilateral Free Trade Agreements (FTAs) with two more South Asian nations namely Bhutan and Nepal.

Though SAARC has already celebrated its silver jubilee in 2010, the achievement has been considered very insignificant and the level of intra-regional trade among SAARC countries is still very low. With the present low level of intra-regional trade and the perceived competitiveness among the SAARC countries, a question has arisen whether regionalism would benefit the countries of this region. Moreover, India is the biggest economy of the region and plays a crucial role for strengthening intra-SAARC trade. But from the literature review (i.e. Venkatasubbulu, 1996; Batra, 2005; Rahman et al., 2006; Baysan et al., 2006; Newfermer and Pierola, 2007; Das, 2007, Ratna and Sidhu, 2008; Banik and Gilbert 2008; etc.), it is realised that India's trade with SAARC countries remained well below the potential level. Hence, it is an important issue to examine the problems and future prospects of India's trade with SAARC countries. The present study has attempted to analyse the same.

The study has been divided into six sections. After the brief introduction in first section, second section outlines general approach and methodology used

for the study. Third section provides an historical background of SAARC and highlights the evolution of SAPTA and SAFTA. Section four examines the various trends in growth, direction and composition of India's merchandise trade with SAARC countries. Various trade related indices, like Instability Index, Hirschman Concentration Index (HCI), Intra-Industry Trade Index (IITI) and Regional Orientation Index (ROI), have been computed in section five. Section six includes conclusions and policy implications of the study.

### **GENERAL APPROACH AND METHODOLOGY**

In the present study, various trends and changes in India's foreign trade with SAARC as a single unit and with individual member countries of SAARC have been analysed over the period from 2000-01 to 2009-10. Further, to know the impact of SAFTA on India's trade with SAARC, the analysis has also been made on two different sub-periods via 2000-01 to 2004-05 (i.e. pre-SAFTA period) and 2005-06 to 2009-10 (i.e. post-SAFTA period) . An attempt has been made to present a complete picture of India's foreign trade with SAARC member countries. The analysis made is of comparative nature in the sense that the trade with SAARC as a single unit has been examined and compared vis-à-vis the overall foreign trade of India. In order to make it more comprehensive and manageable, the time-series information regarding the overall foreign trade of India, trade with SAARC as a unit and with individual SAARC countries has been presented simultaneously in tabular forms in relation to exports, imports and balance of trade, etc. The data has been collected mainly from Monthly Statistics of Foreign Trade of India, Directorate General of Commercial Intelligence and Statistics (DGCI&S), Kolkata; COMTRADE Database, UN Commodity Trade Statistics, United Nations Organisation (UNO); and Handbook of Statistics on Indian Economy, Reserve Bank of India (RBI), Mumbai. The growth rates of India's exports and imports with world and SAARC have been computed at constant prices of 2000-01 by using the following equation of exponential curve:

$$Y = ab^x$$

Where 'a' and 'b' are parameters, 'Y' is dependent variable, and 'x' is time variable. Moreover, for detailed analysis of trade, the following trade related indices have been computed:

#### **Trade Instability Index**

To examine the variations or instability in India's trade with SAARC, trade instability index has been computed with the help of Karl Pearson's coefficient of variation. In fact, this method has been used to compare the variability of two

or more than two series. That series for which the coefficient of variation is greater is said to be more variable or less consistent or less stable. On the other hand, the series for which coefficient of variation is less is said to be less variable or more consistent or more stable (Gupta, 2009). Coefficient of variation is denoted by C.V. and is obtained as follows:

$$C.V. = \frac{\sigma}{\bar{X}} \times 100$$

Here  $\sigma$  stands for standard deviation and  $\bar{X}$  stands for mean.

### **Export Concentration Index or Hirschman Concentration Index (HCI)**

The Export Concentration Index or Hirschman Concentration Index (HCI) is being used to measure the commodity concentration in export-trade of a country (World Bank, 2008). The index is calculated by using the following formula :

$$HCI = \sqrt{\sum (X_{ij} / X_{it})^2}$$

Where  $X_{ij}$  stands for country  $i$ 's exports of product  $j$ ;  $X_{it}$  stands for country  $i$ 's total exports; and  $\sqrt{\quad}$  stands for square root. Highest value for this index is unity which occurs when exports consist of only one good. The lower value of concentration index shows that the exports are more evenly distributed over the various possible categories. Commodity-concentration has been examined at 2-digit HS classifications, from 2000-01 to 2009-10.

### **Intra-Industry Trade Index (IITI)**

Ricardian trade theory predicts that countries would trade on the basis of their comparative advantage in different products. Thus, trade would be inter-industry. However, much actual trade between countries consists of differentiated goods within the same industry. This pattern is consistent with new trade theory involving product differentiation (Cerra et al., 2005). So, in this context, it becomes important to compute the Grubel-Lloyd Intra-Industry Trade Index which measures the proportion of total trade comprised by intra-industry trade (World Bank, 2008). The Index is measured as follows:

$$IIT_i = \frac{\sum_i (X_i + M_i) - \sum_i |X_i - M_i|}{\sum_i (X_i + M_i)} \times 100$$

Where  $X_i$  and  $M_i$  are the values of exports and imports of concerned country with trade partner for commodity group  $i$ . For higher degree of intra-

industry trade, the value of this index will be closer to 100. With the help of data at 2-digit HS classification, the index has been computed for the period from 2000-01 to 2009-10.

### **Regional Orientation Index (ROI)**

The regional orientation index tells us whether a country's exports of a product are more oriented towards a particular region than to other destinations. It is defined as the ratio of two shares. The numerator is the share of the country's exports of the product to the region of interest in the country's total exports to the region. The denominator is the share of the country's exports of the product to other countries in the country's total exports to other countries (Cheong, 2010). The formula for the regional orientation index is :

$$ROI_{cgr} = [x_{cgr} / X_{cr}] / [x_{cgr'} / X_{cr'}]$$

Where

$x_{cgr}$  = exports of good g by country c to region r

$X_{cr}$  = total exports of country c to region r

$X_{cgr'}$  = exports of good g by country c to the countries outside region r'

$X_{cr'}$  = total exports of country c to the countries outside region r'

If the index has a value greater than unity, this implies that the country has a regional bias in exports of the product. Conversely, if the index is less than unity, then the country has no regional bias. The index has been computed for top ten selected Indian exports to SAARC for the period 2000-01 to 2009-10.

### **HISTORICAL BACKGROUND OF SAARC, SAPTA AND SAFTA**

The establishment of SAARC in 1985 was an attempt to reverse the conflicting tendencies of the post-independence era (Kumar, 2009). SAARC was formed with the collaboration of seven member countries, namely Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka, with the vision of welfare enhancement and opportunity to realise the full potential of the region. Dhaka Declaration of thirteenth SAARC Summit in November 2005 included Afghanistan in the forum as its eighth member country (Chowdhury, 2005). In fact, the move towards regional cooperation was initiated by Ziaur Rahman in Bangladesh and taken up by young leaders like Rajiv Gandhi in India and Benazir Bhutto in Pakistan. Following that proposal, Foreign Secretaries of seven South Asian countries met for the first time in Colombo in April 1981. That meeting was followed by the foreign ministers' meeting in New Delhi in August 1983 and they adopted the declaration on South Asian Regional Cooperation (SARC) formally

launching the Integrated Programme of Action (IPA) in five areas of cooperation namely Agriculture, Rural Development, Telecommunications, Meteorology, Health and Public Activities. Finally, a charter was adopted in Dhaka meeting on December 7-8, 1985 to formally establish SAARC. This meeting is subsequently known as first SAARC summit (Abdin, 2009). Till now sixteen SAARC summits have been completed.

### **From SAARC to SAPTA**

At the beginning of its journey, SAARC focused its work mostly in soft areas like health, population, cultural exchange, and sports. In the fourth SAARC Summit in Islamabad, held on December 29-31, 1988, the Heads of States were passed a study report on the cooperation in the areas of trade, manufactures and services. The recommendations of that study led SAARC leaders to think about a preferential trade arrangement within SAARC. At the seventh SAARC summit in Dhaka, held from April 10-11, 1993, the Heads of seven founder member countries agreed to establish the SAARC Preferential Trading Arrangement (SAPTA) to promote and sustain mutual trade and economic cooperation among them. In the eighth SAARC summit held in New Delhi on May 2-4, 1995, the SAPTA agreement was discussed in depth. Importance was given to technical meetings and the finalisation of all necessary modalities so that SAPTA could start its journey by the end of 1995. Indeed, SAPTA entered into force on December 7, 1995. The agreement reflected the desire of member countries to promote and sustain mutual trade and economic cooperation within the SAARC region through the exchange of concessions (Abdin, 2009).

### **From SAPTA to SAFTA**

SAPTA was envisaged primarily as the first step towards the transition to a South Asian Free Trade Area (SAFTA) leading subsequently towards a customs union, common market and economic union. In 1995, the sixteenth session of the Council of Ministers (New Delhi, December 18-19) agreed on the need to strive for the realisation of SAFTA and to this end an Inter-Governmental Expert Group (IGEG) was set up in 1996 to identify the necessary steps for progressing to a free trade area. The tenth SAARC summit (Colombo, July 29-31, 1998) decided to set up a Committee of Experts (COE) to draft a comprehensive treaty framework for creating a free trade area within the region, taking into consideration the asymmetries in development within the region and bearing in mind the need to fix realistic and achievable targets. The agreement on South Asian Free Trade Area (SAFTA), drafted by the COE, was signed on January 6, 2004 during the

twelfth SAARC summit in Islamabad. The agreement entered into force on January 1, 2006 (EXIM, 2008). However, there was a delay in commencement of trade liberalisation programme due to procedural requirements for ratification of the agreement. It was, therefore, agreed that tariff reduction programme would commence on July 1, 2006. The Agreement provides for Special and Differential Treatment (S&DT) for the LDCs (e.g. Bangladesh, Bhutan, Maldives and Nepal) in various forms. The Agreement provides member countries to maintain sensitive lists, consisting of items which are not subject to tariff reduction. Only three countries namely Bangladesh, India and Nepal maintain different sensitive lists for LDCs and Non-LDCs. Besides, the LDCs maintain longer sensitive lists than the Non-LDCs due to the S&DT provisions. The Sensitive Lists are subject to review after every four years or earlier with a view to reduce the number of items which are to be traded freely among the SAARC countries. However, in SAFTA, the present size of sensitive list is much larger than any successful regional trading agreement (RTA). At present, the size of India's sensitive list is 744 items which can restrict all trade of Bangladesh and Maldives to India (Ratna and Sidhu, 2008). At the fourteenth SAARC summit, the Prime Minister of India announced the reduction in the size of India's sensitive list for LDC's. And, hence, Bangladesh and Maldives would be the major beneficiary of this move to get duty free access to the Indian market.

### **INDIA'S TRADE WITH SAARC COUNTRIES**

This section analysis various trends in growth, direction and composition of India's trade with SAARC member countries during 2000-01 to 2009-10.

#### **Trends in Growth of India's Trade with SAARC**

Since 1991, India adopted the policies of Liberalisation, Privatisation and Globalisation (LPG), which strengthened India's trade ties in the world economy and augmented its merchandise trade by great amount. In fact, during nineties, the government of India made special efforts for the expansion of merchandise trade (Singla and Singh, 2008). These efforts remained continue even during the first decade of the new millennium. This is the result of these efforts that India's overall merchandise exports increased from Rs. 203571 crore in 2000-01 to Rs. 845534 crore in 2009-10. The similar trend was seen in case of SAARC countries. During the whole study period, India's exports to SAARC region increased continuously and successive yearly values turned out to be higher than that of the proceeding years. The value of India's exports to SAARC region increased substantially from Rs. 8929 crore in 2000-01 to Rs. 39646 crore in 2009-10. This

**Table 1**  
**India's Overall Exports and Exports to SAARC Countries**

(Rs. Crore)

Years	Overall	SAARC	Afghanistan	Bangladesh	Bhutan	Maldives	Nepal	Pakistan	Sri Lanka
2000-01	203571	8929 (100.00)	118 (1.32)	4272 (47.84)	5 (0.06)	112 (1.26)	643 (7.21)	854 (9.56)	2924 (32.75)
2001-02	209018	9779 (100.00)	116 (1.19)	4780 (48.88)	36 (0.37)	128 (1.31)	1023 (10.46)	687 (7.02)	3009 (30.77)
2002-03	255137	13478 (100.00)	294 (2.18)	5691 (42.23)	189 (1.40)	153 (1.13)	1696 (12.58)	998 (7.40)	4457 (33.07)
2003-04	293367	19729 (100.00)	668 (3.39)	7999 (40.54)	411 (2.08)	195 (0.99)	3076 (15.59)	1319 (6.68)	6062 (30.73)
2004-05	375340	20696 (100.00)	743 (3.59)	7329 (35.41)	380 (1.84)	214 (1.03)	3339 (16.13)	2341 (11.31)	6350 (30.68)
2005-06	456418	24561 (100.00)	632 (2.57)	7369 (30.00)	439 (1.79)	299 (1.22)	3807 (15.50)	3051 (12.42)	8964 (36.50)
2006-07	571779	29274 (100.00)	822 (2.81)	7366 (25.16)	260 (0.89)	311 (1.06)	4201 (14.35)	6107 (20.86)	10206 (34.86)
2007-08	655864	38720 (100.00)	1002 (2.59)	11743 (30.33)	349 (0.90)	361 (0.93)	6063 (15.66)	7827 (20.22)	11374 (29.38)
2008-09	840755	38823 (100.00)	1823 (4.70)	11317 (29.15)	509 (1.31)	590 (1.52)	7156 (18.43)	6532 (16.83)	10895 (28.06)
2009-10	845534	39646 (100.00)	2204 (5.56)	11501 (29.01)	561 (1.41)	378 (0.95)	7251 (18.29)	7461 (18.82)	10290 (25.95)
Annual Average									
2000-01 to 2004-05	267287	14522 (100.00)	388 (2.33)	6014 (42.98)	204 (1.15)	160 (1.14)	1955 (12.39)	1240 (8.40)	4560 (31.60)
2005-06 to 2009-10	1050280	7536 (100.00)	407 (5.26)	1051 (13.77)	645 (8.48)	15 (0.19)	1999 (26.32)	1278 (16.92)	2140 (29.05)
2000-01 to 2009-10	688485	5305 (100.00)	273 (4.86)	683 (12.38)	415 (7.13)	8 (0.13)	1709 (37.19)	790 (13.47)	1426 (24.83)

**Note :** Figures in brackets show percentage share in India's total exports to SAARC.

**Source :** DGCIS Data, Government of India.

rise in exports was seen due to increasing number of mutual trade related agreements among SAARC member countries. Further, during the pre-SAFTA period (i.e. 2000-01 to 2004-05), the annual average of India's exports to SAARC region remained Rs. 14522 crore, which shoot up to Rs. 34205 crore during the post-SAFTA period (i.e. 2005-06 to 2009-10). Thus, at current prices, India's exports to SAARC countries increased rapidly during the post-SAFTA period. Country-wise analysis shows that during 2000-01 to 2009-10, the values of exports remained depressed in case of Afghanistan, Bhutan and Maldives as their annual average share in India's total exports to SAARC remained very low (i.e. 2.99 per cent, 1.21 per cent and 1.14 per cent respectively). On the other hand, during the same period, the annual average share of Bangladesh and Sri Lanka remained quite impressive (i.e. 35.86 per cent and 31.28 per cent respectively). These two countries constituted 67.14 per cent share in India's total exports to SAARC. The share of Nepal and Pakistan also remained healthy during 2000-01 to 2009-10 (i.e. 14.42 per cent and 13.11 per cent respectively). Further, the two sub-periods reflect that during the post-SAFTA period the share of Afghanistan, Bhutan, Nepal and Pakistan improved; the share of Bangladesh and Sri Lanka declined; and the share of Maldives remained constant (Table 1).

The value of India's overall imports increased continuously from Rs. 230873 crore in 2000-01 to 1374436 crore in 2008-09 and then declined to Rs. 1363736 crore in 2009-10. India's imports from SAARC region increased steadily from Rs. 2250 crore in 2000-01 to Rs. 8501 crore in 2007-08 (except the year 2002-03). But, since 2007-08, it declined continuously and reached to Rs. 7837 crore in 2009-10. This may be due the effect of global financial crisis in the world market. Though India's imports from SAARC region declined during the last two years of the study period, even then its annual average value remained higher in post-SAFTA period (i.e. Rs. 7536 crore) than that of pre-SAFTA period (i.e. Rs. 3073 crore). During 2000-01 to 2009-10, the annual average share of Nepal and Sri Lanka in India's total imports from the region remained quite high (i.e. 37.19 per cent and 24.83 per cent respectively). These two countries constituted 62.02 per cent share of India's total imports from SAARC region. As was the case of India's exports to SAARC region, the share of Afghanistan, Bhutan and Maldives in India's imports from SAARC remained very low (i.e. 4.86 per cent, 7.13 per cent and 0.13 per cent respectively). Whereas, the share of Bangladesh and Pakistan remained healthy (i.e. 12.38 per cent and 13.47 per cent respectively). Further, during post-SAFTA period the annual average share of all the countries (except Nepal) improved than their share during pre-SAFTA period (Table 2).

**Table 2**  
**India's Overall Imports and Imports from SAARC Countries**

(Rs. Crore)

Years	Overall	SAARC	Afghanistan	Bangladesh	Bhutan	Maldives	Nepal	Pakistan	Sri Lanka
2000-01	230873	2250 (100.00)	121 (5.40)	368 (16.35)	96 (4.28)	1 (0.04)	1165 (51.79)	292 (13.00)	206 (9.14)
2001-02	245200	2809 (100.00)	84 (2.97)	282 (10.04)	114 (4.06)	2 (0.07)	1698 (60.43)	309 (10.99)	321 (11.44)
2002-03	297206	2567 (100.00)	89 (3.48)	300 (11.70)	156 (6.06)	2 (0.06)	1364 (53.12)	217 (8.46)	440 (17.12)
2003-04	359108	3259 (100.00)	186 (5.71)	357 (10.94)	241 (7.38)	2 (0.05)	1314 (40.33)	265 (8.13)	895 (27.45)
2004-05	501065	4481 (100.00)	211 (4.71)	267 (5.95)	319 (7.12)	3 (0.06)	1554 (34.68)	427 (9.52)	1700 (37.95)
2005-06	660409	6257 (100.00)	259 (4.13)	562 (8.99)	393 (6.28)	9 (0.14)	1682 (26.88)	795 (12.70)	2558 (40.88)
2006-07	840506	6821 (100.00)	156 (2.29)	1034 (15.16)	640 (9.38)	14 (0.20)	1385 (20.30)	1463 (21.45)	2130 (31.22)
2007-08	1012312	8501 (100.00)	440 (5.17)	1035 (12.17)	783 (9.21)	17 (0.20)	2527 (29.73)	1159 (13.63)	2541 (29.89)
2008-09	1374436	8264 (100.00)	592 (7.17)	1418 (17.16)	688 (8.32)	18 (0.22)	2256 (27.29)	1668 (20.19)	1624 (19.65)
2009-10	1363736	7837 (100.00)	590 (7.53)	1205 (15.38)	723 (9.23)	17 (0.22)	2146 (27.39)	1305 (16.65)	1850 (23.61)
Annual Average									
2000-01 to 2004-05	326690	3073 (100.00)	138 (4.46)	315 (11.00)	185 (5.78)	2 (0.06)	1419 (48.07)	302 (10.02)	712 (20.62)
2005-06 to 2009-10	674070	34205 (100.00)	1297 (3.64)	9859 (28.73)	424 (1.26)	388 (1.14)	5696 (16.45)	6196 (17.83)	10346 (30.95)
2000-01 to 2009-10	470678	24363 (100.00)	842 (2.99)	7937 (35.86)	314 (1.21)	274 (1.14)	3826 (14.42)	3718 (13.11)	7453 (31.28)

**Note :** Figures in brackets show percentage share in India's total exports to SAARC.

**Source :** DGCIS Data, Government of India.

The spectre of deficit in balance of trade always looms large over the Indian economy. Since independence, during most of the years, India experienced adverse balance of trade. India's adverse balance of trade increased continuously from Rs. 27302 crore in 2000-01 to Rs. 533680 crore in 2008-09, though it declined to Rs. 518202 crore in 2009-10. However, in case of SAARC region, India experienced positive balance of trade with SAARC. It increased continuously from Rs. 6679 crore in 2000-01 to Rs. 31809 crore in 2009-10 (except the year 2004-05). Further, during post-SAFTA period, the annual average value of India's positive balance of trade with SAARC (i.e. Rs. 26669 crore) remained higher than that of pre-SAFTA period (i.e. 11449 crore). Within the SAARC region, during

**Table 3**  
**India's Balance of Trade with SAARC Countries**

(Rs. Crore)

Years	Overall	SAARC	Afghan-istan	Bangla-desh	Bhutan	Maldives	Nepal	Pakistan	Sri Lanka
2000-01	-27302	6679	-3	3904	-91	112	-522	561	2719
2001-02	-36182	6969	33	4498	-78	126	-675	378	2688
2002-03	-42069	10911	205	5391	33	151	332	781	4018
2003-04	-65741	16470	482	7642	171	193	1761	1054	5167
2004-05	-125725	16216	532	7062	61	211	1785	1914	4649
2005-06	-203991	18304	373	6806	46	290	2126	2256	6406
2006-07	-268727	22453	666	6332	-380	297	2817	4644	8077
2007-08	-356448	30219	562	10709	-434	344	3536	6669	8833
2008-09	-533680	30559	1231	9899	-179	572	4900	4864	9271
2009-10	-518202	31809	1613	10296	-162	361	5105	6156	8440
Annual Average									
2000-01 to 2005-06	-59404	11449	250	5699	19	159	536	938	3848
2004-05 to 2009-10	-376210	26669	889	8808	-222	373	3697	4918	8205
2000-01 to 2009-10	-217807	19059	569	7254	-101	266	2117	2928	6027

Source : Computed from DGCI&S Data, Government of India.

2000-01 to 2009-10, the annual average value of India's balance of trade remained positive for all the countries except Bhutan. The similar trend was found during post SAFTA period where annual average values of India's balance of trade with all SAARC countries (except Bhutan) increased significantly than that of pre-SAFTA period. In fact, India's overall balance of trade with Bhutan turned to be negative since 2006 due to heavy imports of electricity from Tala Hydroelectric Project in Bhutan. However, without electricity, India's balance of trade with Bhutan also remained positive (Table 3).

In absolute terms, India's trade with SAARC countries grew substantially but it did not reveal the true picture of the growth of their mutual trade. For this, it becomes necessary to change these nominal prices into real prices (current values deflated by unit value indices), which is done in Table 4. In real terms, India's overall imports grew at a higher rate than that of exports from 2000-01 to 2009-10. The similar trend can also be seen in two sub-periods. But this trend

**Table 4**  
**Annual Percentage Compound Growth Rate of Exports and Imports : Overall v/s SAARC**

(With base year 2000-01)

Years	Overall	SAARC	Afghanistan	Bangladesh	Bhutan	Maldives	Nepal	Pakistan	Sri Lanka
Exports									
2000-01 to 2004-05	10.08	19.50	62.03	10.44	186.36	11.65	46.12	22.98	17.93
2005-06 to 2009-10	6.16	2.21	25.54	3.03	1.41	0.91	8.33	8.70	-6.57
2000-01 to 2009-10	9.72	9.87	25.91	2.55	34.41	8.51	18.99	24.59	8.04
Imports									
2000-01 to 2004-05	10.93	6.53	10.66	-12.20	25.19	14.13	-5.58	-2.88	54.58
2005-06 to 2009-10	10.70	-2.80	22.86	9.58	3.72	6.91	0.51	1.98	-16.85
2000-01 to 2009-10	12.75	6.32	11.78	9.46	16.17	30.94	-3.81	14.39	16.84

Source : Computed from DGCI&S Data, Government of India.

reversed in case of SAARC region where the growth rate of India's exports remained higher than that of her imports. During the period 2000-01 to 2009-10, the growth rate of India's exports to SAARC region was 9.87 per cent and that of India's imports from SAARC region was 6.32 per cent. Further an interesting point can be observed here is that during post-SAFTA period the growth rate of both India's exports to and imports from SAARC region declined considerably than during pre-SAFTA period. In fact, this was the result of global slowdown which affected the growth of India's exports to and imports from SAARC region. Country-wise analysis shows that in case of exports, the maximum growth rate was attained by Bhutan (34.41 per cent) followed by Afghanistan (25.91 per cent) and Pakistan (24.59 per cent). Whereas in case of imports, the maximum growth rate was attained by Maldives (30.94 per cent) followed by Sri Lanka (16.84 per cent) and Bhutan (16.17 per cent).

#### **Role of SAARC Countries in India's Global Trade**

No doubt, the presence of SARRC member countries in India's global trade is still limited but it is very important to know that where these economies stand in India's global trade. This can be examined via Table 5, which shows SAARC countries' share in India's global exports. Accompanied by lot of variations, the share of SAARC region in India's global exports increased slightly from 4.39 per cent in 2000-01 to 4.69 per cent in 2009-10. During same period, the annual average share of SAARC region in India's global exports remained 5.18 per cent. Further, during post-SAFTA period, the annual average share of the region in India's global exports (i.e. 5.07 per cent) remained less than that of pre-SAFTA period (i.e. 5.43 per cent). The similar trend was seen in case of Bangladesh, Bhutan and Sri Lanka. Whereas the reverse trend was found in case of Afghanistan, Nepal and Pakistan. While the share of Maldives remained same in both the sub-periods. It is worth mentioning that during 2000-01 to 2009-10, the annual average share of only two countries, i.e. Bangladesh and Sri Lanka, is found to be above one per cent while all the other countries have very negligible share in India's global exports.

Table 6 shows percentage share of SAARC countries in India's global imports. As is clear from the table, during the whole study period, the share of SAARC region in India's global imports remained even below one per cent (except the year 2001-02). Its annual average share, during the same period, was also found to be very low (i.e. 0.77 per cent). Further, during post-SAFTA period, the annual average share of share of SAARC region in India's global imports (i.e. 0.72 per cent) was found to be less than that of pre-SAFTA period (i.e. 0.94 per cent).

**Table 5**  
**Percentage Share of the SAARC Countries in India's Global Exports**  
*(Percentage)*

Years	SAARC	Afghanistan	Bangladesh	Bhutan	Maldives	Nepal	Pakistan	Sri Lanka
2000-01	4.39	0.06	2.10	0.00	0.06	0.32	0.42	1.44
2001-02	4.68	0.06	2.29	0.02	0.06	0.49	0.33	1.44
2002-03	5.28	0.12	2.23	0.07	0.06	0.66	0.39	1.75
2003-04	6.73	0.23	2.73	0.14	0.07	1.05	0.45	2.07
2004-05	5.51	0.20	1.95	0.10	0.06	0.89	0.62	1.69
2005-06	5.38	0.14	1.61	0.10	0.07	0.83	0.67	1.96
2006-07	5.12	0.14	1.29	0.05	0.05	0.73	1.07	1.79
2007-08	5.90	0.15	1.79	0.05	0.05	0.92	1.19	1.73
2008-09	4.62	0.22	1.35	0.06	0.07	0.85	0.78	1.30
2009-10	4.69	0.26	1.36	0.07	0.04	0.86	0.88	1.22
Annual Average								
2000-01 to 2004-05	5.32	0.13	2.26	0.07	0.06	0.68	0.44	1.68
2005-06 to 2009-10	5.14	0.18	1.48	0.06	0.06	0.84	0.92	1.60
2000-01 to 2009-10	5.23	0.16	1.87	0.07	0.06	0.76	0.68	1.64

**Source :** Computed from DGCI&S Data, Government of India.

Like the whole region, the share of individual countries in India's global imports remained exceptionally low. Except Nepal, no country constitutes even 0.5 per cent of India's global imports. The annual average share of all the countries remained negligible. While comparing the annual average share of individual countries during pre- and post-SAFTA period, it was found that the share of only Pakistan improved; the share of Nepal and Sri Lanka declined; and the share of Afghanistan, Bangladesh, Bhutan and Maldives remained constant after the formation of SAFTA.

**Table 6**  
**Percentage Share of the SAARC Countries in India's Global Imports**  
*(Percentage)*

Years	SAARC	Afghanistan	Bangladesh	Bhutan	Maldives	Nepal	Pakistan	Sri Lanka
2000-01	0.97	0.05	0.16	0.04	0.0004	0.50	0.13	0.09
2001-02	1.15	0.03	0.11	0.05	0.001	0.69	0.13	0.13
2002-03	0.86	0.03	0.10	0.05	0.001	0.46	0.07	0.15
2003-04	0.91	0.05	0.10	0.07	0.000	0.37	0.07	0.25
2004-05	0.89	0.04	0.05	0.06	0.001	0.31	0.09	0.34
2005-06	0.95	0.04	0.09	0.06	0.001	0.25	0.12	0.39
2006-07	0.81	0.02	0.12	0.08	0.002	0.16	0.17	0.25
2007-08	0.84	0.04	0.10	0.08	0.002	0.25	0.11	0.25
2008-09	0.60	0.04	0.10	0.05	0.001	0.16	0.12	0.12
2009-10	0.57	0.04	0.09	0.05	0.001	0.16	0.10	0.14
Annual Average								
2000-01 to 2004-05	0.96	0.04	0.10	0.06	0.001	0.43	0.09	0.22
2005-06 to 2009-10	0.75	0.04	0.10	0.06	0.001	0.19	0.12	0.20
2000-01 to 2009-10	0.86	0.04	0.10	0.06	0.001	0.33	0.11	0.21

**Source :** Computed from DGCI&S Data, Government of India.

Thus, it can be said that SAARC region constituted a marginal share of India's global trade. The basic reason behind this was the trade restriction measures adopted by the various member countries. For example, in SAFTA, the present size of the sensitive list is much larger than any successful RTA. It is worth mentioning that India's negative list in context of SAFTA is larger than that in some of its bilateral free trade agreements, and almost four times as large as its latest offer in the negotiation for a free trade area with the Association of Southeast Asian Nations (ASEAN). Furthermore, India subjects 15 out of Sri Lanka's top 20 exports to either a tariff rate quota (meaning the tariff preferences applies only up to a pre-specified quantity of imports) or negative list (Baysan et al. 2006). Similarly, out of 319 items on which Sri Lanka offered concessions

of zero duty to India, only three items are actually exported to Sri Lanka (Weerakoon 2001).

Table 7 shows India's share in global trade of SAARC countries in 2009. As is clear, India constituted 85.42 per cent share of Bhutan's global trade followed by Nepal (58.07 per cent) and Sri Lanka (12.20 per cent). The similar trend was seen in case of exports and imports. The only exception was in imports where third spot was taken by Afghanistan replacing Sri Lanka. Here, it is interesting to note that besides the formation of SAFTA, India had bilateral Free Trade Agreements (FTAs) with Bhutan, Nepal and Sri Lanka, and that was one of the reasons why India had big share in their global trade. Further, Nepal and Bhutan both are landlocked countries and bordering to India. The literature suggests that in such cases the neighbours are the most important natural trading partners and one would need to assume that it would not only be the tariff preferences that make India the principal trade partner of Nepal and Bhutan but also the geographical proximity (Ratna and Sidhu, 2008). However, the trade data illustrates the fact that the reverse trend is also true i.e. among the SAARC member countries Nepal is the largest exporter to India. Similarly, the share of Sri Lanka (which is a small island country) in India's trade with SAARC member countries has also grown after bilateral free trade agreement (see Tables 1 & 2). Therefore, one would be inclined to argue that tariff concessions indeed play a significant role in determining the trade flows, even for a landlocked or small island neighbouring country.

**Table 7**  
**Percentage Share of India in SAARC Countries' Global Trade**

(In 2009)

Countries	Exports	Imports	Total
Afghanistan	3.18	18.84	4.87
Bangladesh*	13.24	3.98	9.29
Bhutan	77.84	93.50	85.42
Maldives**	10.42	1.55	9.68
Nepal	56.79	63.52	58.07
Pakistan	3.42	1.34	2.68
Sri Lanka	17.96	4.56	12.20

\*Figures are for year 2007 \*\* Figures are for year 2008

Source : Computed from COMTRADE Database, UNO.

### **Pattern and Structure of India's Trade with SAARC**

The usefulness of foreign trade depends upon the structure and pattern of trade which is determined by the nature of commodities exported and imported by a country (Brar, 1996). The structure of Indo-SAARC trade also exhibited some changes over the period of time. Table 8 shows percentage share of selected commodities in India's total exports to SAARC. The share of selected commodities in India's total exports to SAARC increased continuously from 52.44 per cent in 2000-01 to 70.28 per cent in 2007-08, but then declined to 60.64 per cent in 2009-10. During 2000-01 to 2009-10, the annual average share of selected commodities remained 60.83 per cent. During post-SAFTA period, this share increased to 64.54 per cent from 57.12 per cent of pre-SAFTA period. Moreover, from 2000-01 to 2009-10, among the selected commodities, the annual average share was remained maximum for mineral fuels & oils (i.e. 13.67 per cent) followed by cotton (i.e. 10.08 per cent) and vehicles other than railway (i.e. 7.32 per cent). The analysis of pre- and post-SAFTA period reflects that during the latter period the share of four commodities, i.e. mineral fuels & oils, organic chemicals, edible vegetables and man-made filaments got improved while the share of the remaining six commodities showed a declining trend.

Table 9 shows the share of selected commodities in India's total imports from SAARC region. The total share of selected commodities decreased from 52.73 per cent in 2000-01 to 43.84 per cent in 2009-10. However, during the study period, it fluctuated sharply and hovered between 43.84 per cent and 58.37 per cent. During 2000-01 to 2009-10, the annual average share of selected commodities remained 53.36 per cent. Further, the annual average share of these commodities remained lower in post-SAFTA period (i.e. 51.22 per cent) than that of pre-SAFTA period (i.e. 55.49 per cent). During 2000-01 to 2009-10, among the selected commodities, the annual average share was remained maximum for animal or vegetable fats or oils (i.e. 8.51 per cent) followed by edible fruit & nuts (i.e. 7.17 per cent) and inorganic chemicals (i.e. 4.49 per cent). Further, the analysis of pre- and post-SAFTA period shows that during the later period the share of four commodities (i.e. edible fruit & nuts; mineral fuels & oils; iron & steel; and electrical machinery & equipment) got improved, while the share of remaining six commodities showed a declining trend.

Table 9 shows the share of SAARC region in India's global imports of selected commodities. As in case of exports, all the commodities showed a fluctuating trend. But during 2000-01 to 2009-10, the annual average share of two commodities, i.e. other vegetables textile fibres and coffee & tea, remained very

**Table 8**  
**Share of Selected Commodities in India's Total Exports to SAARC Countries**

Commodity	Share of Selected Commodities in India's Total Exports to SAARC Countries										Percentages		
	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	Annual Average		
											2000-01 to 2004-05	2005-06 to 2009-10	2000-01 to 2009-10
1. Mineral Fuels & Oils	1.90	2.71	11.18	11.89	15.41	21.21	19.21	21.96	18.42	12.83	8.62	18.73	13.67
2. Cotton	14.92	11.38	8.38	9.14	7.42	8.44	9.37	13.46	7.89	10.44	10.25	9.92	10.08
3. Vehicles other than Railway	8.03	7.49	7.83	6.90	8.04	8.01	7.72	5.38	5.97	7.84	7.66	6.98	7.32
4. Cereals	5.26	6.53	9.73	11.79	11.12	6.04	3.41	8.80	3.71	2.16	8.89	4.82	6.86
5. Organic Chemicals	3.26	2.36	2.99	3.50	5.92	4.99	5.39	5.98	5.17	5.00	3.61	5.30	4.45
6. Iron & Steel	4.26	3.77	6.29	6.34	3.81	5.27	4.21	3.88	4.90	5.29	4.89	4.71	4.80
7. Edible Vegetables	4.04	3.42	2.41	3.15	3.70	4.40	3.27	2.54	3.95	4.71	3.34	3.77	3.56
8. Nuclear Reactors & Boilers	5.43	5.73	3.90	4.38	3.74	3.17	2.66	2.64	3.89	3.15	4.64	3.10	3.87
9. Sugars & Sugar Confectionery	4.03	7.46	5.66	2.38	0.49	1.59	8.30	3.97	3.78	0.21	4.00	3.57	3.79
10. Man-made Filaments	1.32	1.06	1.13	1.15	1.49	1.43	1.15	1.68	4.88	9.01	1.23	3.63	2.43
<b>Total</b>	<b>52.44</b>	<b>51.90</b>	<b>59.50</b>	<b>60.63</b>	<b>61.13</b>	<b>64.54</b>	<b>64.69</b>	<b>70.28</b>	<b>62.57</b>	<b>60.64</b>	<b>57.12</b>	<b>64.54</b>	<b>60.83</b>

**Source :** Computed from DGCI&S Data, Government of India.

**Table 9**  
Share of Selected Commodities in India's Total Imports from SAARC Countries

Commodity	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	Annual Average		
											2000-01 to 2004-05	2005-06 to 2009-10	2000-01 to 2009-10
1. Animal or Vegetable Fats & Oils	11.20	18.39	8.36	3.90	4.00	15.94	11.52	10.60	1.09	0.15	9.17	7.86	8.51
2. Edible Fruit and Nuts	10.26	7.05	5.30	6.67	6.51	5.50	7.37	5.99	8.38	8.65	7.16	7.18	7.17
3. Inorganic Chemicals	6.48	4.83	6.45	6.74	3.65	3.94	3.94	2.02	4.44	2.41	5.63	3.35	4.49
4. Mineral Fuels & Oils	5.11	1.55	3.05	0.27	0.17	0.00	8.44	3.71	9.83	1.46	2.03	4.69	3.36
5. Coffee & Tea	4.91	7.01	8.55	5.17	5.54	4.04	2.96	4.22	4.69	5.65	6.24	4.31	5.28
6. Copper and Articles Thereof	4.55	8.95	4.97	13.60	14.44	12.79	10.93	6.15	2.61	4.31	9.30	7.36	8.33
7. Other Vegetable Textile Fibres	3.95	3.91	5.72	4.65	2.38	2.91	3.07	2.84	2.25	3.90	4.12	2.99	3.56
8. Plastic and Articles Thereof	2.48	2.80	4.46	4.06	5.31	3.70	2.29	3.25	3.58	4.29	3.82	3.42	3.62
9. Iron and Steel	3.13	2.53	7.94	8.31	8.64	4.43	3.83	7.65	9.68	10.91	6.11	7.30	6.70
10. Electrical Machinery & Equipment	0.67	0.69	1.22	3.25	3.71	2.45	4.02	2.92	2.29	2.11	1.91	2.76	2.34
<b>Total</b>	<b>52.73</b>	<b>57.73</b>	<b>56.01</b>	<b>56.63</b>	<b>54.35</b>	<b>55.72</b>	<b>58.37</b>	<b>49.35</b>	<b>48.83</b>	<b>43.84</b>	<b>55.49</b>	<b>51.22</b>	<b>53.36</b>

Source : Computed from DGCI&S Data, Government of India.

**Table 10**  
**Major Commodities in India's Trade with SAARC in 2009-10**

<b>Countries</b>	<b>Exports</b>	<b>Imports</b>
Afghanistan	Man-made filaments (44.78); Pharmaceutical products (8.84); Rubber and articles thereof (6.21); Electrical machinery & equipment (5.04); Dairy produce, birds' eggs & natural honey (5.04)	Edible fruit & nuts (69.18); Lac, gums and other vegetable saps (20.05); Edible vegetables (7.35); Coffee & tea (3.00); Oil seeds and Fruits (0.34)
Bangladesh	Cotton (18.58); Edible vegetables (10.32); Vehicles other than railway (10.04); Residues & waste from the food industries (8.18); Iron & steel (5.49)	Other vegetable & textile fibres (21.77); Other made up textile articles (19.99); Fish & crustaceans (9.95); Salt, sulphur, earths & stone (7.84); Copper and articles thereof (4.53)
Bhutan	Vehicles other than railway (26.41); Mineral fuels & oils (19.35); Nuclear reactors & boilers (9.18); Iron & steel (8.05); Electrical machinery & equipment (7.57)	Iron & steel (60.94); Copper and articles thereof (15.68); Inorganic chemicals (11.70); Plastic (3.91); Wood and articles of wood (3.81)
Maldives	Cereals (11.74); Salt, sulphur, earths & stone (11.37); Pharmaceutical products (7.34); Plastic (6.59); Sugars and sugar confectionery (4.98)	Iron & steel (60.62); Copper and articles thereof (23.49); Aluminium and articles thereof (7.58); Nuclear reactors & boilers (4.21); Miscellaneous goods (2.30)
Nepal	Mineral fuels & oils (22.55); Iron & steel (11.27); Vehicles other than railway (9.43); Nuclear reactors & boilers (5.93); Salt, sulphur, earths & stone (5.87)	Iron & steel (16.72); Plastic (11.51); Man-made staple fibres (9.29); Coffee & tea (7.44); Beverages, spirits and vinegar (4.83)

**Contd. Table 10**

Pakistan	Man-made filaments (26.90); Organic chemicals (19.63); Cotton (15.19); Residues & waste from the food industries (5.57); Edible vegetables (3.86)	Organic chemicals (16.95); Edible fruit & nuts (16.86); Salt, sulphur, earths & stone (15.51); Cotton (14.19); Lead and articles thereof (5.80)
Sri Lanka	Mineral fuels & oils (25.77); Vehicles other than railway (10.69); Cotton (7.02); Pharmaceutical products (4.60); Iron & steel (4.16)	Coffee & tea (13.64); Residues & waste from the food industries (12.49); Rubber and articles thereof (11.44); Ships & boats (9.83); Electrical machinery & equipment (7.33)

impressive (i.e. 46.42 per cent and 34.85 per cent). Further, except these two commodities, annual average share of SAARC in respect of remaining eight commodities remained less than her average share in India's total imports (i.e. 0.86 per cent in Table 6). Thus, SAARC is an important source for these Indian imports. Moreover, the annual average share of four commodities (i.e. animal or vegetables fats & oils; edible fruit & nuts; mineral fuels & oils; and electrical machinery & equipment) improved in post-SAFTA period than that of pre-SAFTA period, while the annual average share of remaining six commodities showed a declining trend.

Table 10 shows top five commodities of India's exports to and imports from individual SAARC member countries in 2009-10. It is apparent from the table that these commodities cover major share of India's total trade with these countries. India's exports of selected five commodities to Pakistan cover maximum share (i.e. 71.15 per cent) followed by Bhutan (70.56 per cent) and Afghanistan (69.91 per cent). On the other side, India's imports of selected five commodities from Afghanistan covers almost 100 per cent share (i.e. 99.93 per cent) followed by Maldives (98.20 per cent) and Bhutan (96.02 per cent). It is also worth mentioning that the items exported by India to individual SAARC member countries are different than the items which are imported to India from them. However, there are certain sectors where the two-way trade is taking place (e.g. iron & steel; organic chemicals; and cotton). This scenario can be best explained by the fact that each country is exporting to the other a specialised product (at different 6 or 8 digit HS level). This may also mean that the industries in these countries are

also in a process of establishing a backward and forward linkage amongst themselves. But still, the number of such commodities is very low. In one way this explains that there is an existence of some complementarity between India and other SAARC nations but still it is not fully exploited. Lastly, the Table also suggests that most of the commodities traded by India with SAARC nations belong either to primary product or to natural resource based products. Hence, India's trade basket with SAARC countries is still very limited.

### **TRADE RELATED INDICES**

Various aspects of India trade with SAARC member countries have been examined by using the different indices. These indices help in understanding and explaining the trade in more elaborated and different perspectives.

#### **Trade Instability Index**

Current values of India's merchandise trade with SAARC showed some variations during the study period. Hence, it would be interesting to see the trade instability index of India's exports to and imports from SAARC. As is clear from the Table 13, during the 2000-01 to 2009-10, instability indices of India's exports and imports with SAARC (i.e. 48.90 per cent and 47.24 per cent respectively) remained less than that of world (i.e. 52.47 per cent and 64.19 per cent). Thus, it can be said that India's exports and imports with SAARC remained more stable than India's overall exports and imports. Further, exports to and imports from SAARC region got more stable during post-SAFTA period than that of pre-SAFTA period. Country-wise analysis shows that in case of Afghanistan, Bhutan, Maldives and Pakistan, the variation in both exports and imports were found to be higher than SAARC as a unit. Whereas, in case of Bangladesh and Sri Lanka, exports were more stable and in case of Nepal imports were more stable than SAARC as a unit. Further, India's exports to all SAARC countries (except Maldives) got more stable in post-SAFTA period than that of pre-SAFTA period. While India's imports - from Bhutan, Maldives and Sri Lanka got more stable; from Afghanistan, Bangladesh and Nepal got more instable; and from Pakistan remained constant during the post-SAFTA period than pre-SAFTA period.

**Table 11**  
**India's Trade Instability Indices: Overall and SAARC Countries**

Years	Overall	SAARC	Afghanistan	Bangladesh	Bhutan	Maldives	Nepal	Pakistan	Sri Lanka
Exports									
2000-01 to 2004-05	26.43	37.73	77.35	26.72	92.21	26.87	61.73	53.10	35.61
2005-06 to 2009-10	25.19	20.08	52.51	23.12	28.60	30.39	28.43	30.49	8.77
2000-01 to 2009-10	52.47	48.90	81.85	34.66	60.15	53.33	62.40	78.89	44.17
Imports									
2000-01 to 2004-05	33.58	28.27	41.65	14.35	50.39	38.14	14.70	25.80	85.78
2005-06 to 2009-10	30.14	12.76	48.16	30.02	23.29	25.17	22.99	25.80	19.35
2000-01 to 2009-10	64.19	47.24	72.09	64.79	64.95	88.42	26.60	71.11	63.04

Source : Computed from DGCIS Data, Government of India.

**Export Concentration Index or Hirschman Concentration Index (HCI)**

Table 14 presents the concentration index of India's overall exports and its exports to SAARC. As is clear, the values of concentration index for India's overall exports increased from 0.23 in 2000-01 to 0.26 in 2009-10. It means, during the study period, India's global exports got more concentrated. In other words, it got less evenly distributed over a range of commodities. During same period, the annual average value of concentration index for India's overall exports remained 0.24 which is almost equal to the annual average value of concentration index for India's exports to SAARC region (i.e. 0.25). Further, during post-SAFTA period, India's exports to SAARC region remained more concentrated (i.e. 0.27) than that of pre-SAFTA period (i.e. 0.23). Country-wise analysis shows that during 2000-01 to 2009-10 the annual average values of concentration index for all the countries (except Maldives) remained higher than that of SAARC as a unit. Hence, India's exports to individual SAARC countries remained less diversified than that of

SAARC as a unit. Further, the analysis of pre- and post SAFTA period shows that after the formation of SAFTA, annual average value of concentration index for Pakistan declined; for Afghanistan, Maldives, Nepal and Sri Lanka increased; and for Bangladesh and Bhutan remained constant.

**Table 12**

**India's Export Concentration Index : Overall and SAARC Countries**

(Percentage)

Years	Overall	SAARC	Afghanistan	Bangladesh	Bhutan	Maldives	Nepal	Pakistan	Sri Lanka
2000-01	0.23	0.23	0.34	0.29	0.40	0.21	0.27	0.40	0.23
2001-02	0.23	0.21	0.31	0.25	0.31	0.23	0.29	0.39	0.22
2002-03	0.23	0.23	0.30	0.28	0.34	0.23	0.28	0.31	0.25
2003-04	0.23	0.24	0.30	0.31	0.30	0.20	0.31	0.42	0.27
2004-05	0.24	0.25	0.29	0.31	0.29	0.23	0.37	0.44	0.30
2005-06	0.23	0.28	0.27	0.29	0.31	0.24	0.45	0.35	0.36
2006-07	0.24	0.27	0.32	0.26	0.30	0.24	0.44	0.39	0.36
2007-08	0.25	0.30	0.35	0.35	0.32	0.26	0.38	0.38	0.41
2008-09	0.25	0.25	0.40	0.26	0.35	0.29	0.41	0.31	0.34
2009-10	0.26	0.24	0.47	0.28	0.36	0.23	0.30	0.38	0.31
Annual Average									
2000-01 to 2005-06	0.23	0.23	0.31	0.29	0.33	0.22	0.30	0.39	0.26
2004-05 to 2009-10	0.25	0.27	0.36	0.29	0.33	0.25	0.39	0.36	0.36
2000-01 to 2009-10	0.24	0.25	0.33	0.29	0.33	0.24	0.35	0.38	0.31

Source : Computed from DGCI&S Data, Government of India.

**Intra-Industry Trade Index (IITI)**

Intra-industry trade represents international trade within industries rather than between industries. Such trade is more beneficial than inter-industry trade because it stimulates innovation and exploits economies of scale. Moreover, since productive factors do not switch from one industry to another, but only within

industries, intra-industry trade is less disruptive than inter-industry trade. About 60 per cent of the U.S. trade or European trade is intra-industry (Ruffin, 1999). The comparison of this figure with that of India's intra-industry trade with SAARC countries clearly shows a disappointing picture. During 2000-01 to 2009-10, intra-industry trade between India and SAARC region varied between 21.36 per cent and 28.69 per cent, but its annual average value remained 24.98 per cent. Thus, it can be said that the level of intra-industry trade between India and SAARC is not up to the mark. Keeping in view the similar factor endowments, there exist vast potential for intra-industry trade between India and SAARC countries. The best example of it is textile industry. But the actual status of intra-industry trade is quite disappointing. In fact, the restrictive export promotion policies of the

**Table 13**  
**Intra-Industry Trade Index between India and SAARC Countries**

(Percentage)

Years	SAARC	Afghanistan	Bangladesh	Bhutan	Maldives	Nepal	Pakistan	Sri Lanka
2000-01	23.77	6.03	6.26	6.85	1.53	27.12	9.18	10.43
2001-02	25.10	15.99	4.69	9.36	2.90	22.69	19.30	13.36
2002-03	22.99	3.61	3.48	30.89	2.08	33.93	16.96	12.43
2003-04	21.36	3.53	4.17	25.94	1.75	29.99	8.09	15.10
2004-05	25.55	2.34	4.53	26.18	2.54	29.17	11.81	22.18
2005-06	26.23	3.66	4.68	26.38	5.69	24.79	24.80	18.09
2006-07	24.57	2.84	8.60	10.31	8.51	25.24	13.63	19.65
2007-08	24.54	1.96	7.24	12.59	8.85	30.28	14.08	22.22
2008-09	28.69	1.07	9.94	13.50	5.90	31.37	17.21	21.83
2009-10	26.99	1.31	8.04	12.26	8.63	32.41	16.33	24.95
Annual Average								
2000-01 to 2004-05	23.75	6.30	4.63	19.84	2.16	28.58	13.07	14.70
2005-06 to 2009-10	26.20	2.17	7.70	15.01	7.52	28.82	17.21	21.35
2000-01 to 2009-10	24.98	4.24	6.16	17.43	4.84	28.70	15.14	18.02

Source : Computed from DGCI&S Data, Government of India.

SAARC member countries kept the level of intra-industry trade lower than that of potential level. The formation of SAFTA may be a positive step towards the strengthening of intra-industry trade among member countries. This is what Table 15 shows that the index for SAARC region got improved during post-SAFTA period (i.e. 26.20 per cent) than that of pre-SAFTA period (i.e. 23.75 per cent). Country-wise analysis shows that the level for intra-industry trade with Nepal is maximum (i.e. 28.70 per cent), followed by Sri Lanka (18.02 per cent), Bhutan (17.43 per cent) and Pakistan (15.14 per cent). In case of the remaining three countries, it was very low.

### **CONCLUSIONS AND POLICY RECOMMENDATIONS**

In order to make SAARC a meaningful coalition and a strong economic block, substantial progress towards its economic integration is very important. SAARC countries, as geographically proximate neighbours need to take advantage of their close proximity to increase their trade flows. But, India, as being the largest country of the block, plays a limited role in global trade of member countries (except few). Though India's trade with SAARC member countries has increased during last decade but it is still lower than the required level. On the basis of above analysis, following conclusions can be drawn :

- Though absolute values of India's exports and imports with SAARC countries increased rapidly, but growth rate of both exports and imports had a dip during the last few years (mainly after the formation of SAFTA). However, one reason of this dip in trade was global financial crisis which had slowed down the growth of India's global trade. Thus, it will be wrong to say that the formation of SAFTA is worth-less. In fact, this is positive step towards the strengthening of merchandise trade among member countries.
- India experienced positive balance of trade with SAARC as compared to its overall negative balance of trade. Except Bhutan, India's balance of trade with all SAARC member countries remained positive. India's balance of trade with Bhutan remained negative mainly due to heavy imports of electricity from Tala Hydroelectric Project in Bhutan.
- During the study period, SAARC region constituted only 2.55 per cent share of India's global trade. On the other side, India is playing a dominating role in SAARC member countries' global trade e.g. it constitute 85.42 per cent share of Bhutan's global trade followed by Nepal (58.07 per cent) and Sri Lanka (12.20 per cent). It is worth mentioning that besides the formation of SAFTA among the SAARC

countries, India has bilateral Free Trade Agreements (FTAs) with these three countries and that is the major reason of India's growing share in these countries' global trade. Hence, it can be concluded that in South Asia these bilateral Free Trade Agreements (FTAs) are playing dominating role in trade than SAFTA.

- Commodity composition of India's trade with SAARC nations reveals that most of the commodities belong either to primary products or to natural resource based products. Further, it has also been found that there exist some complementarity between India and other SAARC nations but it is still unexploited.
- The instability index of India's exports and imports with SAARC remained less than that of India's overall exports and imports. Country-wise analysis shows that for most of the countries, this index remained higher than India's overall index. Though, few commodities cover major share of India's total exports to SAARC nations, even then concentration index has been found to be little for SAARC region and almost equal to India's overall concentration index. Further, the annual average values of concentration index for all the countries (except Maldives) remained higher than that of SAARC as a unit. Hence, India's exports to individual SAARC countries remained less diversified than that of SAARC as a unit. Intra-industry trade index (IITI) reveals that during the study period the level of intra-industry trade between India and SAARC countries remained well below the potential level. Though this index has improved after the formation of SAFTA but still it is much below the required level. Lastly, the regional orientation index (ROI) shows that for selected Indian exports to SAARC, there is a strong regional orientation. But it should be noted that most of these commodities belong to primary or natural resource based products. For other manufactured products, the scene may be different.

India, being the largest economy in SAARC, its role is widely regarded as crucial in determining the effectiveness of SAFTA and therefore, it will have to play a pro-active and leading role in drawing the future agenda or the road map of SAFTA. In this regard, the following actions, if taken by India and all other member countries of SAARC, would give much needed boost to intra-regional trade under SAFTA :

- As is clear from the above discussion, SAARC region constituted only 2.55 per cent share of India's global trade. The efforts should

be made to enhance their mutual trade by the way of liberalisation. The currently prescribed long time frame for tariff liberalisation needs to be shortened, implying advancement in the tariff liberalisation schedule.

- In SAFTA, the present size of the sensitive list is much larger than any successful RTA. To facilitate the intra-regional trade and investment flows, it is important that the size of the sensitive list of each SAFTA member needs to be reduced drastically.
- India's trade basket with SAARC countries is still very limited and restricted mainly to primary products and natural resource based products. Hence, there is an immense need to diversify this trade basket.
- Though the instability and concentration indices were found to be lower in case of SAARC as a unit but in case of Afghanistan and Pakistan, India's instability index and concentration index were found to be higher. Hence, there is an immense need to pay attention towards this end. India should diversify its trade basket with these countries and try to switch her trade from highly instable commodities to lower ones.
- Keeping in view the vast potential of intra-industry trade among SAARC countries, all of them should exploit this opportunity with open minds. By adopting export promotion policies, the SAARC member countries can strengthen the level of intra-industry trade among themselves.
- And lastly, in South Asia, political distrust, especially between India and Pakistan, has blocked trade in the past and remains a potent deterrent to trade. India has granted MFN status to Pakistan. Pakistan does not, however, grant MFN status to India on a reciprocal basis. Pakistan argues that if it grants MFN status to India, Indian goods will flood Pakistan's market. Pakistan also cites its adverse balance of trade as a reason for refusing MFN status to India. But, according to Batra (2009), although the import of high value-added goods such as textiles, machinery, engineering goods, pharmaceuticals, iron and steel products, automobiles, and chemicals is likely to increase Pakistan's trade deficit with India, it is less likely to have an impact on the country's overall trade balance, mainly because it already imports these commodities from other countries

at higher costs than it would pay for similar goods from India. Enhanced trade with India may, therefore, result only in cost savings for Pakistan. India's trading status with Pakistan is a critical issue for SAFTA's operation, and will need to be resolved in a way consistent with WTO requirements.

To make SAFTA a successful regional block, efforts made by India alone will not be sufficient and a collective developmental goal would need to be set up by all the SAARC member countries. A comprehensive action plan, therefore, is needed to make SAFTA a meaningful and effective regional trading block.

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## **The Day of the Week Effect in Stock Market Returns and Volatility : Evidence from BRIC Markets**

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### **Abstract**

Calendar anomalies may be defined as seasonalities or consistent patterns observed in stock returns that are not explained by any acceptable theory of finance. The primary objective of this paper is to investigate the day-of-the-week effect in returns and volatility of the BRIC stock markets namely Brazil, Russia, India and China. Daily return data of the selected indices for the period spanning from July 1997 to August 2011 has been used for the analysis. The empirical study was conducted using GARCH (1, 1) model. The results of the study exhibit existence of Wednesday and Thursday effect in the mean return of Russian and Chinese stock markets respectively. Seasonality is also evident in the stock return volatility in all the four emerging stock markets.

### **Key Words**

EMH, Seasonality, Day-of-the-Week Effect, Dummy Variable, GARCH Model, BRIC Economies.

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### **INTRODUCTION**

Fama (1970) presented the famous efficient market hypothesis, stating that stock prices reflect all available private and public information regarding the value of the firm, and thus, no investor can make superior profit by having access to this information. The efficient market hypothesis paved new ways to investigate the randomness of stock prices. Since then various studies have been conducted to challenge the validity of efficient market hypothesis by documenting anomalous behavior of market and linking it with recurring periods of time. Calendar anomalies

may be defined as the tendency of stock returns to display consistent and systematic patterns at certain times of the day, week, month and year. Number of anomalies have been discovered and remain a matter of interest for researchers. Day-of-the-week effect occurs when stock returns are unidentically distributed across various days of the week. This effect states that financial assets return keep on changing and vary from day to day.

The present study investigates the existence of the day-of-the-week effect in stock index returns and volatility of BRIC markets. BRIC is an acronym that refers to the countries of Brazil, Russia, India and China, which are at a similar stage in their economic development. These four countries have experienced a huge growth and it is expected that, by the year 2050, the combined economies of BRIC nations could become among the four most dominant economies of the world. In fact, Goldman Sachs believes that by 2050 these will be the most important economies, leaving behind the US to fifth place. Brazil, Russia, India and China are today bigger than ever before and they play an essential role in the current world. They have become the favourite investment destination for FIIs and institutional investors the world over. It is, therefore, of vital importance to study the stock price behavior of these emerging super powers which might provide useful insight to institutional investors, portfolio managers and individual investors to strategise their investment decisions and diversify their portfolios internationally.

## **REVIEW OF LITERATURE**

Stock market anomalies have been extensively investigated the world over and there have been divergent views on their existence. Some of the important theoretical and empirical studies related to day-of-the-week effect have been reviewed here. Cross (1973) studied the returns on S&P index for a period of eighteen years and found that the mean return on Friday was higher than the mean return on Monday. It was attributed as 'Monday Effect'. French (1980) examined the process that generates stock returns and found that the mean return for Monday was significantly negative, while the mean returns for the other days of the week were positive. Gibbons and Hess (1981) further examined the individual stocks and treasury bills returns in the U.S. They found Monday returns to be significantly negative. Further, the study of market-adjusted returns exhibited that day-of-the-week effect was not concentrated on Monday.

Rogalski (1984) employed intra-day data to provide additional insight into the weekend effect. It was found that all the average negative returns from Friday close to Monday close occurred mainly during the non-trading period. Jaffe and

Westerfield (1985) examined the stock market returns for four countries, namely U.K., Japan, Canada and Australia. They found the existence of day-of-the-week effect in each country. Miller (1988) found that the returns tend to be negative from Friday close to Monday close. The possible explanation was that the sell orders were more frequent on Monday than buy orders and this pattern reversed later in the week.

Chaudhury (1991) examined the existence of anomalous price behavior in the Indian stock market. He observed that the average return on Monday was indeed negative but Tuesday marked still higher level of mean negative return. Broka (1992) examined daily closing values of BSE National index and found that the mean daily returns were lowest (negative) on Wednesday and they rose to peak on Friday. Tang (1993) studied the existence of day-of-the-week effect in weekly data. The black Monday effect was reconfirmed by him.

Agarwal and Tandon (1994) examined five seasonal patterns in stock markets of eighteen countries: the weekend, turn-of-the-month, end-of-December, monthly and Friday-the-thirteenth effects. They found a daily seasonal in nearly all the countries, but a weekend effect in only nine countries. Brooks and Persaud (2001) investigated the evidence for a day-of-the-week effect in five Southeast Asian stock markets : South Korea, Malaysia, Philippines, Taiwan and Thailand. Friday indicates significant seasonality for three of the five markets. Sarma (2004) explored the day-of-the-week effect on the Indian stock market returns in the post-reform era. He analyzed that the Indian stock markets do manifest seasonality in their returns' pattern. Aly, Mehdian and Perry (2004) investigated day-of-the-week effect in the Egyptian stock market. The study indicates that Monday returns in the Egyptian stock market are positive and significant on average, but are not significantly different from returns of the rest of the week.

Gao and Kling (2005) examined the calendar effect in Chinese stock market, particularly monthly and daily effects. They found that Mondays are weak trading days compared to the rest of the week. However, only Fridays exhibit significant results. Wong, Agarwal and Wong (2006) investigated the January effect, day-of-the-week effect, turn-of-the-month effect and holiday effect in the Singapore stock market over the period from 1993-2005. They found that these anomalies have largely disappeared from the Singapore stock market.

Bundoo (2008) investigated the day-of-the-week effect and January effect on the Stock Exchange of Mauritius (SEM) for the period January 2004 to December 2006. Positive and statistically significant Wednesday and Friday effect are observed. Selvarani and Janefa (2009) investigated the existence of a day-

of-the-week effect, financial year effect (April effect) in the NSE indices by analyzing the trends in annual returns and daily returns for the period 2002-07. They found that month-of-the-year effect is found more prevalent than the day-of-the-week effect in India. Muhammad and Rehman (2010) analyzed the data of Kuala Lumpur Composite Index (KLCI) from 4th January 1999 to 29st December 2006 to measure the day of the week effect in Malaysian stock market. Using dummy variable regression model, the study concluded that the Malaysian stock market was characterized by the presence of day of the week effect (Monday effect). Suman and Chahal (2011) analyzed the data of BSE Sensex from January 1999 to May 2010 to explore the day of the week effect on Bombay Stock Exchange (BSE) of India. Applying parametric and non-parametric tests, they found empirical evidence on day of the week effect in BSE volatility but not in returns. The present study is also an attempt in the same direction. The basic objective of the paper is to investigate the existence of the day-of-the-week effect in index returns and volatility of BRIC economies which have assumed an important place in the world economy and are considered as the future growth engines. The present study is an attempt to improve as it covers a very recent and longer time period.

## RESEARCH METHODOLOGY

The objective of this paper is to examine the existence of day-of-the-week effect in BRIC (Brazil, Russia, India and China) stock markets. Table 1 presents the country wise details about the index used, reference period and source of data.

**Table 1**  
**Data Table**

Country	Index	Period	Source
Brazil	BVSP INDEX (BOVESPA SAO PAULO Stock Exchange)	Jan. 1997 to Aug. 2011	Yahoo Finance
Russia	RTSI (RTS Exchange)	Jan. 1997 to Aug. 2011	www.rts.ru
India	BSE SENSEX (BSESN)	July 1997 to Aug. 2011	Yahoo Finance
China	SSE (Shanghai Stock Exchange)	Jan. 2000 to Aug. 2011	Yahoo Finance

The daily stock returns for the selected stock indices are calculated as follows :

$$R_t = \ln (P_t / P_{t-1}) * 100$$

Where  $R_t$  is daily return on the share price index for day t,  $P_t$  is the closing value of the index for the day t and  $P_{t-1}$  is the closing value of the index for the preceding day t-1.

To test empirically the existence of day-of-the-week effect in BRIC stock markets the following null hypotheses have been tested :

$H_{01}$  : The mean daily stock returns across all the trading days of the week are statistically equal.

$H_{02}$  : The volatility of daily stock returns across all the trading days of the week is statistically equal.

$H_{03}$  : The mean daily return of every trading day of the week is not statistically different from the mean returns of rest of the days of the week.

Firstly, the summary statistics of the daily returns of the selected indices have been calculated, namely, mean, standard deviation, skewness and kurtosis. Jarque-Bera (JB) test of normality has been applied to the index return series. The

non-parametric Kruskal-Wallis (H) test has been applied to test the first hypothesis of equality of mean daily returns across all the trading days of the week. The value of H is calculated by formula :

$$H = \frac{12}{N(N+1)}$$

Where  $k$  is the number of samples,  $n_j$  is the number of values in the  $j^{th}$  sample,  $N$  is the total number of values and  $R_j$  is the sum of ranks in the sample. The calculated H value has been compared with the table value of the chi-square ( $\chi^2$ ) distribution with  $(k - 1)$  degree of freedom. If the calculated H value is greater than ( $\chi^2$ ) the null hypothesis is rejected and vice-versa. Levene's F-statistics has been computed to examine the second hypothesis of equality of variances across the trading days of the week. The Levene's F-statistics used here is :

$$W = \frac{N - K}{(K - 1)} \frac{\sum_{i=1}^k N_i (z_i - z_j)^2}{\sum_{i=1}^k \sum_{j=1}^{N_i} Z_{ij}^2}$$

Where : W = the result of Levene's-statistics,  
 K = the is the number of different groups to which the samples belong,  
 N = total number of observations,

$N_i$  = number of samples in the  $i$ th group,  
 $Y_{ij}$  = value of the  $j$ th sample from the  $i$ th group,

$$Z_{ij} = \begin{cases} |Y_{ij} - \hat{Y}_i| \\ |Y_{ij} - \hat{Y}_j| \end{cases}, \hat{Y}_i \text{ is a mean of } i\text{-th group, } \hat{Y}_j \text{ is a median of } i\text{-th group}$$

Further, the Mann-Whitney U test has been applied to test the third hypothesis that the mean daily return of every trading day of the week is statistically different from the mean returns of other days of the week. The Mann-Whitney U-test is calculated as follows :

$$Z = \frac{U - m_u}{\sigma_u}$$

Where  $m_u$  and  $\sigma_u$  are the mean and standard deviation of U,  $n_1$  is the sample size for sample 1 and  $n_2$  is the sample size for sample 2.  $m_u$  and  $\sigma_u$  are given by :

$$\sigma_u = \sqrt{\frac{n_1 n_2 (n_1 + n_2 + 1)}{12}} \quad m_u = n_1 + n_2 / 2$$

The following dummy variable regression model has been applied to examine the existence of the day-of-the-week effect by a number of researchers.

$$R_{it} = \beta_1 D_{1t} + \beta_2 D_{2t} + \beta_3 D_{3t} + \beta_4 D_{4t} + \beta_5 D_{5t} + \varepsilon_t$$

Where  $R_{it}$  is the return of the index on month  $t$ ,  $D_{jt}$  is the dummy variables which take on the value 1 if the corresponding return for day  $t$  is a Monday, Tuesday, Wednesday, Thursday or Friday, respectively and 0 otherwise,  $\beta_j$  is the coefficient which represent the average return for each day of the week and  $\varepsilon_t$  is the error term. But this model suffers from two serious problems. Firstly, errors in the model may be auto-correlated, resulting in misleading inferences. Secondly, error in variance may not be constant over time, which means Heteroscedasticity. In order to account for the auto-correlation problem, we introduced the return with a one week delay into the regression model as used in the work by Berument and Coskun (2007), Corredor and Santamaria (1996) and Apolinario and Santana (2006), among others.

$$R_{it} = \beta_1 D_{1t} + \beta_2 D_{2t} + \beta_3 D_{3t} + \beta_4 D_{4t} + \beta_5 D_{5t} + \beta_{j+5} r_{t-j} + \varepsilon_t$$

In order to consider the second problem, the study adopts Engle (1982) autoregressive conditional heteroskedasticity (ARCH) models. These models assume that the variance of residuals ( $\sigma^2$ ) is not constant over time. The generalized version of these models was proposed by Bollerslev (1986), where the variance

$\hat{Y}_{j-1}^4$

of the residual is expressed as the sum of a moving-average polynomial of order q on past residuals (the ARCH term) plus an autoregressive polynomial of order p, on vast variance (the GARCH term) :

$$\sigma_t^2 = \alpha_0 + \sum_{i=1}^p \alpha_i + \sum_{i=1}^q \lambda_i + \sigma_{t-1}^2$$

To measure the day of the week effect on the volatility of underlying stock markets, the dummy variables have been introduced in the above equation which account for the possible stationary effects within the equation of variance. The result of this approach is that joint estimates of the day of the week effects are obtained, not only in the mean but also in the variance.

$$\begin{aligned} \gamma_{it} &= \beta_1 D_{1t} + \beta_2 D_{2t} + \beta_3 D_{3t} + \beta_4 D_{4t} + \beta_5 D_{5t} + \sum_{j=1}^4 \beta_{j+5} r_{t-j} + \varepsilon_t \\ \varepsilon_t &\sim \text{iid} (0, \sigma^2) \\ \sigma^2 &= \beta_1 D_{1t} + \beta_2 D_{2t} + \beta_3 D_{3t} + \beta_4 D_{4t} + \beta_5 D_{5t} + \sum_{i=1}^q \alpha_{i+1} + \sum_{i=1}^2 \alpha_{t-i} \end{aligned}$$

Before using time series in the GARCH model it is a precondition that the series must be stationary. So to ensure the stationarity in the series Unit root test has been applied. The Augmented Dickey-Fuller (ADF) unit root test is used for this purpose. The ADF regression used here is :

$$\Delta Y_t = b_0 + \delta Y_{t-1} + \alpha_1 \Delta Y_{t-1} + \alpha_2 \Delta Y_{t-2} + \dots + \alpha_p \Delta Y_{t-p} + \varepsilon_t$$

(Minimum AIC is used to determine numbers of lags)

**RESULTS AND DISCUSSION**

The descriptive statistics of daily stock returns of BRIC stock markets is presented in Table 2. All the stock return series record a positive mean return during the study period. Brazil records the highest mean return of 0.0577 per cent closely followed by Russia (0.0568 per cent), India (0.0386 per cent) and China (0.0201 per cent) respectively. The higher returns for Brazil are also accompanied by higher value of standard deviation (4.4186) in comparison to standard deviation of Russia (2.7352), India (1.7222) and China (1.6332). All countries except Brazil record negative skewness which indicates the elements of persistency in the returns of the underlying stock indices. The value of kurtosis is greater than 3 in all the index return series which implies that the returns series have heavier tails than the standard normal distribution. The JB (Jarque-Bera) statistics is used to test the normality of a time series data. The computed values of JB statistics are significant at one per cent level for all the indices thus rejecting the null hypothesis of normality of index return distribution.

**Table 2**  
**Descriptive Statistics of Daily Stock Returns of BRIC Stock Markets Indices**

<b>Descriptive</b>	<b>Brazil</b>	<b>Russia</b>	<b>India</b>	<b>China</b>
Mean	0.0577	0.0568	0.0386	0.0201
Std. Dev.	4.4186	2.7352	1.7222	1.6332
Skewness	8.1748	-0.4673	-0.0932	-0.1138
Kurtosis	19.009	10.479	8.2567	7.3784
Jarque-Bera	592.08*	8653.07*	4038.34*	2391.64*
Probability	0.0000	0.0000	0.0000	0.0000
Observations	3629	3655	3503	2986

\* Significant at 1% level

Since the result of normality tests indicates that the distributions of return series are not normal, the non-parametric tests, namely the Kruskal-Wallis (H) and Levene's F-Statistics have been used to examine the equality of mean returns across weekdays and for the equality of variances across different days of the week. The results of K-W (H) statistics and Levene's F-statistics are presented in the Table-3. It is observed that the mean returns are not uniformly distributed in case of Russia and China. The null hypothesis of equality of mean returns across various days of the week stands rejected at 5 per cent level of significant indicating the presence of day of the week effect in Russian and Chinese stock markets. The Levene's F-statistics indicates that except Russia, rest of the three stock markets, namely, Brazil, India and China record a statistically significant variation in volatility across various days of the week. This gives a strong evidence of existence of seasonality in volatility across weekdays.

To further examine the nature of seasonality Mann-Whitney U-test has been used to investigate whether the mean return of a particular day is statistically different from the mean return of the rest of the days of the week. The results in Table 4 indicate that in Russia, Wednesday records significant negative mean return, different from mean returns of the rest of the days of the week. In case of India, Monday mean return is significantly different from the mean return of the rest of the days of the week but it is not significant enough to create seasonality in the overall return distribution. Mean Monday and Thursday returns are significantly different from the mean return of the rest of the days of the week in the Chinese stock market. Monday mean return is significantly higher than the mean return of the rest of the days whereas Thursday mean return is significantly lower than the mean return of the rest of the days of the week. Mean returns of Brazil is uniformly distributed across week days.

**Table 3**  
**Day-Wise Descriptive of Daily Stock Returns of BRIC Stock Markets Indices**

Countries	Descriptive	Mon	Tues	Wed	Thu	Fri	K-W(H) Statistics	K-W(H) Statistics
Brazil	Mean	-0.0724	0.1560	0.1183	0.1219	0.2002	7.9172	7.9172
	Std. Dev.	2.3920	1.7857	2.1650	2.3636	2.1998	(0.0946)	(0.0946)
	Observations	725	722	744	719	719		
Russia	Mean	0.1033	0.0125	-0.1278	0.0883	0.2005	7.9774*	7.9774*
	Std. Dev.	2.8995	2.7052	2.8199	2.7818	2.4920	(0.0492)	(0.0492)
	Observations	690	736	742	738	721		
India	Mean	0.1209	0.0168	0.1020	-0.0071	-0.0408	6.5074	6.5074
	Std. Dev.	2.0531	1.5477	1.5921	1.5700	1.7963	(0.1643)	(0.1643)
	Observations	702	704	704	704	689		
China	Mean	0.1299	0.0425	0.0961	-0.1088	0.0266	10.561*	10.561*
	Std. Dev.	1.9715	1.5143	1.6106	1.5590	1.4576	(0.0319)	(0.0319)
	Observations	592	601	601	596	596		

Figures in the parenthesis denote the respective p-values.  
\*significant at 5% level, \*\*significant at 1% level.

**Table 4**  
**Results of Mann-Whitney U-test**

Countries	Days	Mean Difference	Z-value	P-value
Brazil	Mon	-0.0833	-1.9441	0.0621
	Tue	-0.1876	-0.6222	0.5342
	Wed	0.1560	-0.9423	0.3460
	Thu	-0.1448	-1.3571	0.1752
	Fri	0.2568	-1.7311	0.0841
Russia	Mon	0.1160	-1.4736	0.1410
	Tue	-0.0518	-1.3402	0.1802
	Wed	-0.2285	-1.9901*	0.0473
	Thu	0.0432	-0.6161	0.5381
	Fri	0.1830	-1.2923	0.1963
India	Mon	0.1029	-2.2423*	0.0251
	Tue	-0.0273	-0.5351	0.5922
	Wed	0.0793	-0.5228	0.6023
	Thu	-0.0573	-0.9701	0.3324
	Fri	-0.0989	-1.2671	0.2055
China	Mon	0.1369	-2.3180*	0.0201
	Tue	-0.0784	-0.3022	0.7631
	Wed	0.0951	-0.8051	0.3955
	Thu	-0.1611	-2.4381*	0.0151
	Fri	0.0080	-1.0304	0.3033

\* Significant at 5% level

It may be inferred that the seasonality in mean returns across weekdays in Russia and China as indicated from the K-W (H) statistics (Table 3) is primarily because of significantly returns on Wednesday in Russian and on Monday and Thursday in Chinese stock markets.

In order to apply the GARCH model the stationarity of the index return series has been measured using Augmented Dickey Fuller (ADF) test. The results of the test in Table 5 confirm that the return series of Brazil, India, Russia and China are stationary at 1 per cent level it means they are integrated of zero order i.e. I(0).

**Table 5**  
**Results of Augmented Dickey Fuller Test**

Variable	ADF Test Statistic With Intercept	ADF Test Statistic With Trend & Intercept
Brazil data series	-59.8148*	-59.8310*
Russia data series	-52.4011*	-52.3939*
India data series	-55.0478*	-55.0458*
China data series	-53.3222*	-53.3148*

\* Significant at 1% level

Critical values for Intercept -3.4319(1% level), -2.8621 (5% level), -2.5671(10% level)

Critical values for Trend & Intercept -3.9606(1% level), -3.9606 (5% level), -3.1273(10% level)

The results of the GARCH estimations in mean equation are presented in Table-6. The Russian stock market depicts a Wednesday effect as evident from the significantly negative mean coefficient (-1.9091). On the other hand, the Chinese stock market exhibits a Thursday effect as indicated by significantly negative

**Table 6**  
**The Day-of-the-Week Effect in GARCH (1, 1) Model (Estimates of Mean Equation)**

Countries		Mon ( $\beta_1$ )	Tues ( $\beta_2$ )	Wed ( $\beta_3$ )	Thur ( $\beta_4$ )	Fri ( $\beta_5$ )
Brazil	Coefficient	-0.0885	-0.1862	0.1572	-0.1441	0.2583
	t-value	-0.4673	-0.9853	0.8408	-0.7608	1.3658
	p-value	0.6403	0.3245	0.4005	0.4468	0.1721
Russia	Coefficient	0.0558	-0.0511	-0.2267	0.0429	0.1861
	t-value	0.4539	-0.4272	-1.9091*	0.3583	1.5458
	p-value	0.6499	0.6692	0.0501	0.7200	0.1222
India	Coefficient	0.1036	-0.0274	0.0792	-0.0574	-0.0988
	t-value	1.4038	-0.3721	1.0753	-0.7788	-1.3323
	p-value	0.1604	0.7098	0.2823	0.4361	0.1828
China	Coefficient	0.1311	-0.0767	0.0957	-0.1586	0.0097
	t-value	1.6635	-0.9784	1.2238	-2.0305*	0.1238
	p-value	0.1963	0.3279	0.2211	0.0424	0.9015

Figures in the parenthesis denote the respective p-values.

\*significant at 5% level, \*\*significant at 1% level.

mean coefficient (-2.0305). As far as India and Brazil are concerned none of the regression coefficient is statistically significant indicating the non-existence of day of the week effect in mean return distribution of Indian and Brazilian stock markets. The results of the model confirm the results of summary statistics and the non-parametric tests.

The structure of volatility as measured by ARCH and GARCH components in the variance equation is reported in Table-7. It may be observed that the past news as indicated by GARCH (1) as well as the recent news indicated by ARCH (1) coefficient have a positive and significant bearing on the volatility of the returns of the underlying stock market indices. The magnitude of the coefficient of GARCH (1) is comparatively higher than that obtained in case of ARCH (1) which implies that the historical information affects the stock market in a significant way and shocks to conditional variance take a long time to die out in stock markets.

In case of Brazil it is evident that volatility is significantly low on Friday as indicated by the negative sign of the coefficient. The results indicate significant and higher volatility on Monday and Tuesday and low on Friday in Russia. In case of India volatility is significantly high on Monday and low on Wednesday and in Chinese stock market Monday records significant and higher volatility and Friday registers low volatility.

Friday records statistically significant low volatility in three out of four stock markets investigated namely Brazil, Russia and China. This implies that end of the trading week is marked by lower level of price fluctuations attributable to the two days long non-trading weekend. Monday exhibits significantly high volatility in all the stock markets except Brazil. Thus, it may be inferred that the trading week commences with higher level of volatility.

## **CONCLUSION**

The assumption that stock prices are random is basic to efficient market hypothesis. There has been an ongoing progress in research in the field of market efficiency and the related anomalies. The present paper made an attempt to examine the existence of day-of-the-week effect in stock index returns and volatility of BRIC (Brazil, Russia, India and China) stock markets. Indian and Brazilian stock markets did not exhibit any significant evidence for the presence of day-of-the-week anomaly in return series whereas Chinese and Russian stock markets record statistically significant negative Thursday and Wednesday effect respectively. All the stock markets under investigation exhibit seasonality in volatility of stock return distributions across weekdays as indicated by the results of the variance

equation of GARCH model. The trading week commences (Monday) with a significantly high level of volatility whereas the close of the trading week, i.e., Friday is marked by lower levels of volatility. The results of the study indicate the presence of day of the week seasonality in both the stock return series and volatility, though the timing of the seasonality is not identical in all the investigated stock markets. The results of the study may help the investors to take advantage of relatively regular shifts in the market and strategise their investment decisions accordingly.

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## **Role of Marketing in Education Sector : A Study on Professional Education Institutes**

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### **Abstract**

In present time, marketing acts, as an integral part of each industry, even education industry cannot keep itself away from it. The term marketing can be considered as a subpart of the word cosmopolitan, which means those who can survive/adapt in any type of environmental conditions. Marketing as a tool or technique can make organization cosmopolitan. By adapting innovative or improved ways of marketing, one can survive in ever-changing environment. The objective of the study is to find and analyze the improved and innovative ways of marketing employed by various educational institutes of the state of Punjab. This study used both primary and secondary sources of data. Primary data was collected through personal/telephonic interview from various marketing department or college heads. Secondary data was collected from newspapers, published materials and official websites of various education institutes. The sample area was various education institutes located in state of Punjab and sample size was 25 education institutes. Various strategies which were identified are talent hunt test, Management fest, Scholarship test, Tech. fest, Student clubs, book bank, integrated courses, covering entrance exam, school visits, temporary admission offices, corporate offices, door to door bus facility, LBL, foundation classes, admission agents etc. This study will help the education institutes to understand which method will have significant impact on students and their parents and help in craft the marketing strategies accordingly.

### **Key Words**

Strategies adopted in education marketing, Government initiative to promote professional education.

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## **INTRODUCTION**

Education is considered as a noble business. In the past, when education institutes were few in number and the only body imparting education was government but with the passage of time and with the rise in concept of globalization, demand for engineers and managers rises. To meet this demand need for new education institutes arises, and with the entrance of private entities in education service, gives rise to competition among the education institutes (How to attract potential students).

The Question arises here How to survive this competition?

Answer to this Question is marketing

The early stages of marketing in education industry is advertisement in newspaper and word of mouth publicity. But with the rise in number of education institutes, which leads to rise in competition, marketing is considered/ undertaken at extensive rate. Besides employing traditional methods of marketing, new and innovative ideas are generated and employed to attract potential students. To archive this objective, colleges recruit both specialized and multi-specialty faculty. Some colleges have specialized marketing department, on the other hand, some colleges prefer to recruit those faculty members who serve both the purpose i.e. teaching and marketing. Former method is adopted by well-established colleges, who bear the cost of specialized department while later method is adopted by new colleges, who are working on cost cutting objective.

## **OBJECTIVE**

1. To identify various strategies followed by professional education institutes for marketing.
2. And for what purpose these methods are employed.

## **LITERATURE REVIEW**

Marketing is defined by the AMA as "the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large.

Marketing is used to identify the customer, satisfy the customer, and keep the customer as the focus of its activities. It generates the strategy that underlies sale techniques, business communication, and business developments.[3] It is an integrated process through which companies build strong customer relationships and create value for their customers and for themselves.

Marketing strategy is a process that can allow an organization to

concentrate its limited resources on the greatest opportunities to increase sales and achieve a sustainable competitive advantage. Marketing strategies serve as the fundamental underpinning of marketing plans designed to fill market needs and reach marketing objectives. Plans and objectives are generally tested for measurable results. Commonly, marketing strategies are developed as multi-year plans, with a tactical plan detailing specific actions to be accomplished in the current year.

## **RESEARCH METHODOLOGY**

This study used interviewing method. Data was collected from various institutes located in state of Punjab. The period of study covered from March to August 2011. The project was carried out to identify the various strategies adopted for marketing and for what purpose these strategies are used.

### **Sampling**

The sampling design adopted for study is convenient sampling. The sample size for the study is 25 colleges, which were distributed in various locations in state of Punjab.

### **Data Collection**

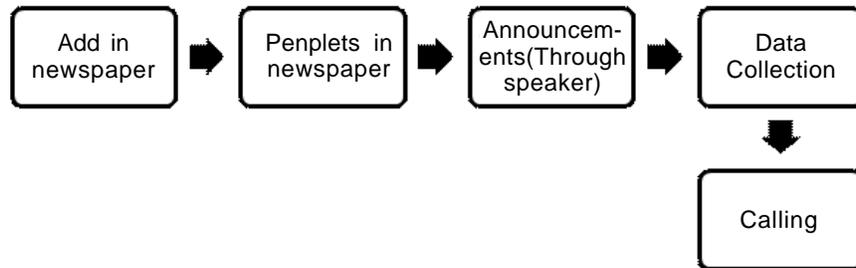
This research used both primary and secondary data. The primary data has been collected through personal and telephonic interview. The secondary data has been obtained from various newspapers, published and official sites of various education institutes.

### **Sequence of Activities Followed in Education Marketing**

The starting of marketing activity commenced with advertisement in newspapers published in local language, as penetration level of local language news is higher and deeper in remote villages. Newspaper ads are followed by pamphlets in news paper published in each and every language. This step ensures the reach to each and every household of the potential area. Third step is announcements, the primary vehicles/vectors used for announcement are college buses installed with speakers; other factor used is announcement from gurdawara's speaker systems. College teaching or non-teaching staff is also sent along with the college bus, in case any person requires more information regarding course or college. Fourth step includes activities like school visits, interaction with school students and data collection of potential students. Last step in marketing activity is calling the data which is collected in previous steps are contacted through phone and information regarding college and course is given if required. SMS

containing information regarding college and courses are also sent on all the contact numbers collected in the previous step.

**Diagram 1 : Sequence of Marketing Activities**



### Marketing Strategies or Methods

1. **Talent Hunt Test** : It is a open test and students who are appearing in X, XII or graduation recently passed are invited to undertake this test. Test covers 3-4 sections normally of reasoning, mental ability, general knowledge and data interpretation. To ensure maximum participation or to stimulate more and more students to participate, prizes in the form of money, certificate or tuition fee waiver is given.
2. **Mock Test** : It is a preparatory test, students who are undertaking management, engineering or medical entrance exams are given a chance to check the extent of their preparation for final entrance exam by undertaking the mock test. Registration is entirely free of cost and paper is set on the original paper format.
3. **Management Fest** : A kind of festival, organized especially by management department. In this festival various management games are organized and winners are given prizes. Food stalls add frolic to this fest. New and innovative ideas are encouraged and are displayed in the form of projects.
4. **Covering Various Entrance Exams** : Marketing teams of every education institute distribute their college published materials to the students who came at various exam centers for entrance exam. Published materials can be in the form of brochure, leaflet, and copies with college feature on cover pages.
5. **Industrial Visits / Tours** : Although industrial visits are part of curriculum of coerces like engineering, management etc. But its credibility depends upon the type of industry visit organized by education institute. If education institute is capable of organizing visits to MNC it will enhance the image of education institute. On the other hand, tours are organized fun and frolic. The purpose is to provide few day off from studies to students.

**Table 1**  
**List of Various Methods Employed for Marketing**

1. Talent hunt test
2. Mock tests
3. Management fest
4. Covering various entrance tests
5. Industrial visits/Tours
6. Posters & banners
7. Admission agents
8. LBL
9. School visits
10. Book bank
11. Door to door bus facility
12. Tech/Science fest
13. Scholarship test
14. Integrated courses
15. Digital displays
16. Foundation classes
17. Placements
18. Student clubs
19. Electronic media
20. Students involvement
21. Coupon system
22. Announcements
23. Wall paintings
24. Advertisements in newspaper/ local T.V
25. Permanent/ Temporary admission offices
26. Collaboration with overseas universities
27. Fee waiver

- 6. Advertisement in Newspaper / T.V. :** To remind about the education institute and its features, advertisement in the form of print and broadcast form are used on regular basis.
- 7. Posters / Banners :** Prime locations like bus stand, tuition centers, crowded markets are identified and are flooded with posters and banners depicting features and courses offered by education institute.

8. **Admission Agents** : Persons like private teachers providing tuitions, government teachers, village heads like sarpanch act as admission agents. These influential personalities by their words help in motivating and driving persons for admissions, in return these persons get predefined amount for every admission.
9. **LBL** : Leave behind literature includes leaf lets, brochures etc. The innovative idea is use of calendars with pictures of god, goddesses or gurus. The reason behind is to avoid the situation like throw. Gifts like table clock are also given the important persons.
10. **School Visits** : 3-4 months before starting new sessions, marketing team of education institute pay visits to every potential school of the area to communicate with the students by direct interaction or by giving power point presentations covering every feature of their education institute. These visits are on the name of providing carrier counseling to the students but the actual purpose is to market the college.
12. **Book Bank** : After completion of the course students can donate their books to their education institute and these books was kept in book bank from where forthcoming students can issue and study.
13. **Tech Fest** : The festival is for engineering students. The purpose behind is to encourage new ideas regarding technology. It is college oriented but now day's schools are invited to visits as well as participate in the form of projects.
14. **Scholarship Tests** : Students who are in X, XII or graduation or recent pass outs are given the chance to sponsor their education by scoring position in scholarship test. In this test a common test is conducted covering questions in the field of reasoning, general knowledge, mathematical ability. Students securing first three positions are given scholarships in the form of tuition fee rebate.

Another form of scholarship is in the form of pre decided slabs regarding tuition fee waiver E.g.

**Table 2**  
**Tuition Fee Waiver**

Slabs	Tuition Fee Waiver
Students securing more than 90% in X, XII, Graduation	100%
Students securing between 70-90% in X, XII, Graduation	75%
Students securing between 60-70% in X, XII, Graduation	50%

- 15. Admission Offices :** Admission offices are opened in prime location, where students gathering are large. These offices are by college staff itself. These offices can be of two types :
- (1) Permanent- Open 365 days a year
  - (2) Temporary- Opened at the time of admissions i.e. March-July
- 16. Integrated Courses :** Two individual courses in the same field are merged together but the time of completion of integrated course is less than individual sum total of two courses. e.g.

**Table 3**

**Integrated Courses**

BBA	3 years
MBA	2 years
Integrated Course (BBA+MBA)	5 years

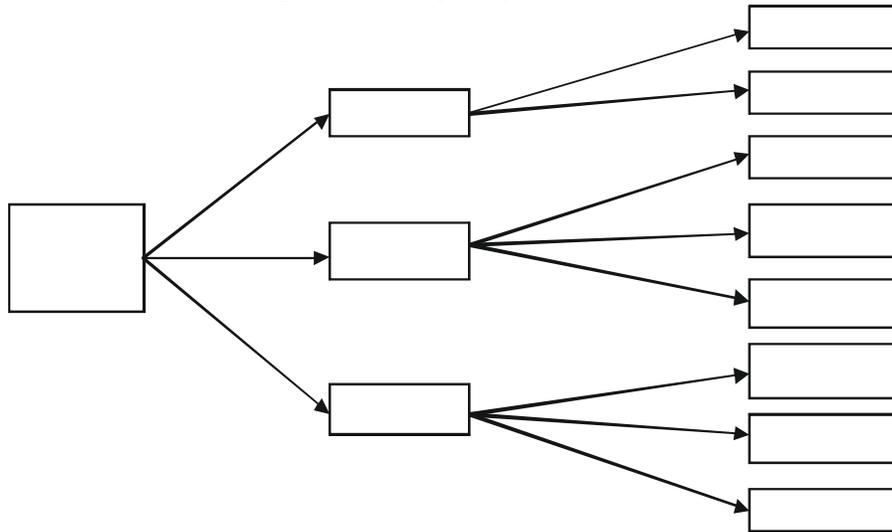
- 17. Collaboration with Overseas Universities :** In this method students complete their half of the course duration in parent country education institute and half of course duration in a foreign country education institute. Pricing of these courses are higher than the actual course input. This method is used to target higher income class.
- 18. Digital Displays :** Use of digital displays at the cross roads or chowks are seen. In this method education institute gets the contract to maintain the chowk. Along with sign boards, digital displays are used depicting institutes name and courses offered. The theory behind is to target daily travelling passengers and make them aware about education institute and its courses offered. e.g. Bhai Gurdas Group of Colleges use digital displays on Barnala chowk in Sangrur city.
- 19. Foundation Classes :** Students who are weak in a particular subject are provided with foundation/ extra classes before starting the actual course classes. It provides an extra assistance to weak students.
- 20. Placements :** Going to be passed out batches are provided with job offer with in their college campus. In this method companies are invited in the college campus to recruit potential human resource. Students are recruited on probation period and their contract will be renewed after analyzing their performance in probation period.

The innovative idea in placements is assessment centers; these are external independent entity that has the authority to recruit human resource on the behalf of company. Students can approach these

assessment centers personally or college can invite. To undertake this test students have pay certain amount in the form of fee. To enhance the goodwill among students, college can contribute half of fee amount by itself and rest half by students.

21. **Student Clubs :** These organizations can be formal or informal types. Formal clubs are recognized by education institute and activities are organized on the regular basis with the consent of institute authority. Authority and responsibility is formally identified. Each formal group is headed by teaching staff along with student representative. On the other hand informal groups are those that are not recognized by education institute e.g. clubs formed in hostel. These clubs organize their activities on their own basis.
22. **Electronic Media :** Electronic media like SMS and E-mail are sent to those students whose data was being collected through various marketing activities. The content of message consists of courses offered by the college with admission helpline number at the end of message.
23. **Students Involvement :** Students from every village are selected and are given the task to gather potential youths from their own village at a single place, Where representatives of college provide them career guidance. This method is easy to employ and effectiveness is high, as students already have the knowledge about the potential youth of their village and can gather them easily making the job of marketing staff easier.
24. **Coupon System :** It is an innovative idea in the education industry, but it is already in existence and are successfully employed by marketing organizations. The idea is taken from AMWAY. In this method a coupon is given to every existing student of education institute. Coupon is divided into three parts with identical coupon number on every part. First part of coupon contains detail of the referee student, rest of the three parts are for the refereed candidate. One referee student can nominate only three refereed candidates. The purpose behind this method is use of existing students to attract more candidates for admission. For every one admission referee and referred students get s benefit of Rs 1000 in the form of fee waiver in the semester fee. Every referred candidate is given a coupon at the time of admission and the cycle goes on. It is like a chain reaction, in which one student can refer three candidates for admission purpose and each three refereed candidate can further refer three candidates individually and so on.

**Diagram 2 : Coupon System Channel**



□ = Referee student      → = Referred Student

25. **Announcements :** This method is a kind of facility to people, which is provided by college. Announcement contains information regarding admission n opening, kind of courses offered by college. The primary vehicles/vectors used for announcement are college buses installed with speakers; other vector used is announcement from gurdawara's speaker systems. College teaching or non teaching staff is also sent along with the college bus, in case any person requires more information regarding course or college.
26. **Wall Paintings :** Wall painting is an effective and economical medium for communication, as it stays for longer time depending on weather conditions. Walls of farm houses, shops, schools are ideal places for wall paintings. The walls have to paint 1-2 feet from the ground. It is better to take permission of the owner. Very often the owner takes the responsibility for taking care of the wall paintings. The matter should be in the form of pictures, alphabets for catching the attention of people.
27. **Fee Waiver :** In this form if there are two students from safe father, then one student is provided with concession in tuition fee ,in every semester. The amount of concession is decided by the college authorities. It can be in the form of some part percentage of tuition fee e.g. 10/15/20 percentage of tuition fee or some particular amount e.g. Rs 1000/1500/ 2000.

## GOVERNMENT INITIATIVE TO PROMOTE PROFESSIONAL EDUCATION

1. **Neighborhood Campus Program** : To promote technical education Punjab state government has taken initiative through Neighborhood campus program. In this program every college offering technical education is associated with 8-10 government senior secondary schools. Visits are organized for school students to their associated college to show workshops or technical labs. The objective is to provide practical knowledge to school students, as infrastructural facilities are not available in adequate quantity in school campus.
2. **JET Entrance Coaching** : Free JET entrance coaching is provided to the students pursuing secondary class. Responsibility regarding coaching is given to concerned subject teacher. JET entrance forms availability is also ensured in the schools so that maximum participation of students can be ensured.
3. **Fee Waiver to Category Students** : Students of scheduled caste category are provided with free education from university or from any affiliated college to university. Under this scheme certain percentage of seats are reserved in every college for scheduled caste candidates. The objective is to uplift lower category section both in terms of standard of living and education in society.

## FINDINGS

1. The various marketing methods employed by education institutes serve four purposes. These purposes are listed below:-
  - (1) To keep reminding local crowd about college.
  - (2) For direct admissions.
  - (3) For data collection.
  - (4) To satisfy present customers (students) this spread positive word of mouth publicity.
2. To keep local crowd reminding and to feel the presence of education institutes in the local crowd, methods like advertisements in newspaper, local T.V channel, posters banners, SMS, E-mail, digital displays are used.
3. Admission agents, temporary admission offices, permanent corporate offices serve the purpose of direct admissions for education institute.
4. Methods like talent hunt test, mock test, management and tech. fest, scholarship test, science fair, covering entrance tests, school visits, served as marketing cum data collection methods. Students are required to register

first, through well-designed registration form consist of student & fathers name followed by address, contact number, and choice of course. This data base is later on used at the time of admissions.

5. Industrial visits, tours organized, student clubs, foundation classes methods are adopted to satisfy the present customers (Students) who help in spreading positive word of mouth publicity.
6. Integrated courses help in developing attractive product mix besides offering individual traditional courses.
7. Methods like foundation/extra classes can work both ways. It can help in stopping or retreating students who are weak in particular subjects by giving extra assistance to students but sometimes students attend these classes to check the course difficulty and later they switch to some other easier course.

## **CONCLUSION**

The objective of this study was to find out the various marketing strategies adopted and what purpose these methods fulfill. Study identifies 26 methods adopted by various education institutes for marketing purpose. These methods are talent hunt test, Management fest, Scholarship test, Tech. fest, Student clubs, book bank, integrated courses, covering entrance exam, school visits, temporary admission offices, corporate offices, door to door bus facility, LBL, foundation classes, admission agents. The purpose these methods fulfill are categorized under four headings, these are reminding, direct admission, data collection and satisfying. Every method needs to be carefully administered in order to get desired results. Time plays crucial role in deciding the effectiveness of these methods. Every method needs to be executed at the time when needed, not before or not after that appropriate time.

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## **Implementation of IFRS in India : A Study of Chartered Accountants' Perspective**

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Accounting is the language of business while financial reporting is the medium through which the language is communicated. Accounting and financial reporting are regulated by Generally Accepted Accounting Principles (GAAP) comprising accounting standards, company law, stock market regulations, and so on. GAAP for accounting and financial reporting gives answers to differences in business communication between countries. The global GAAP that is seeking to unify accounting and financial reporting world is the International Financial Reporting Standards (IFRS) issued by the International Accounting Standards (IASs; International Financial Reporting Standards (IFRSs); Standing Interpretations Committee (SICs) pronouncements; and International Financial Reporting Interpretations Committee (IFRICs) guidelines.

Accounting Framework has been shaped by International Financial Reporting Standards (IFRS) to provide for recognition, measurement, presentation and disclosure requirements relating to transactions and events that are reflected in the financial statements. IFRS was developed in the year 2001 by the International Accounting Standard Board (IASB) in the public interest to provide a single set of high quality, understandable and uniform accounting standards. Users of financial statement world require sound understanding of financial statement but this can only be made possible if there is General Accepted Accounting Practice (GAAP). With globalization of finance gaining ground, it will enable the world to exchange financial information

in a meaningful and trustworthy manner. International Accounting Standards (IAS) or International Financial Reporting Standards (IFRS) is now used almost in every country as the reporting standard. First move was when European Union adopted IFRS and made it mandatory as reporting standard for consolidated financial report of corporation listed in European stock market.

Usage of IFRS in Europe show an accounting standard change, from previous national GAAP (which is different one another) to IFRS. Another business entity (non-listed in European stock market) also plans to use IFRS as their reporting standard so their report will be in accordance with global standard (IFRS). In the progress of IFRS adoption, now there are more than 122 countries using IFRS or in convergence period.

There are two approaches used in IFRS adoption: convergence and full adoption. In convergence, standard setter will adjust national GAAP so the usage of this new-adjusted national GAAP will be same or similar with IFRS. While in full adoption, all IFRS will be fully implemented.

India today has become an international economic force. To stay as a leader in the international market, India opted the changes it needs to interface Indian stake-holders, the international stakeholders and comply with the financial reporting in a language that is understandable to all of them. The International Financial Reporting Standards (IFRS) aims to make international financial reporting comparisons as easy as possible because each country has its own set of accounting rules. It is a set of international accounting and reporting standards that will help to harmonize company financial information, improve the transparency of accounting, and ensure that investors receive more accurate and consistent reports.

The introduction of IFRS represents a fundamental change in financial reporting. It is not something that can be handled in a few weeks prior to adoption. Planning for it, generating the necessary awareness, educating stakeholders and managing the required changes will take considerable commitment and time to achieve a successful transition. IFRS brings groups and collective working to achieve profits, brings about fair value in the business. Now, as the world globalizes, it has become imperative for India also to make a formal strategy for convergence with IFRS with objective to harmonise with GAAP.

Beginning from 1st April 2011, companies listed in National Stock Exchange (Nifty 50), Bombay Stock Exchange (Sensex 30), Companies whose stocks are listed outside India and companies which are listed or not but which have their net worth exceeding Rs 1000 crores are required to carry out the convergence of Indian Accounting Standard with IFRS. Reliable, consistent and uniform financial reporting is important part of good corporate governance practices worldwide in order to

enhance the credibility of the businesses in the eyes of investors to take informed investment decisions. In pursuance of G-20 commitment given by India, the process of convergence of Indian Accounting Standards with IFRS has been carried out in Ministry of Corporate Affairs through wide ranging consultative exercise with all the stakeholders. Thirty five Indian Accounting Standards converged with International Financial Reporting Standards (henceforth called IND AS) was notified by the Ministry of Company Affairs of India. In India, The Ministry of Corporate Affairs (MCA) has issued the roadmap for convergence to IFRS recently that is applicable to all companies excluding banking and insurance companies. Accordingly, all the companies need to reconvert their opening Balance Sheet in accordance to the IFRS in phased manner. The industry that is most affected by the adoption of IFRS in India is the banking industry. All insurance companies will convert their opening balance sheets with IFRS from April, 2012, while non-banking finance companies (NBFCs), which are part of the NSE or BSE or have a net worth of over Rs 1,000 crore, will converge their opening books of accounts with IFRS norms from April 1, 2013.

Following are the deadlines for companies other than banking, insurance and non banking financial companies :

**Table 1**

Phase	Companies Covered	Opening Balance-sheet	First Financial Statements
Phase I	<ul style="list-style-type: none"> <li>● Companies that are part of NSE-Nifty 50 Index</li> <li>● Companies that are part of BSE Sensex 30 Index</li> <li>● Companies that have shares or other securities listed in overseas stock exchanges; and</li> <li>● Listed and Unlisted Companies with net worth in excess of Rs.1000 Crores</li> </ul>	1st April, 2011	31st March, 2012
Phase II	<ul style="list-style-type: none"> <li>● Listed and Unlisted Companies with network in excess of Rs. 500 Crores but not exceeding Rs. 1000 Crores</li> </ul>	1st April, 2013	31st March, 2014
Phase III	<ul style="list-style-type: none"> <li>● Listed entities with network of Rs. 500 Crores or less</li> </ul>	1st April, 2014	31st March, 2015

**Source :** The road to IFRS in India: A practical guide to IFRS 1 and first-time adoption by Grant Thornton

At present, Accounting Standards Board (ASB) formulates and issues accounting standards in India which are more or less in line with IFRS except for a few instances where departure is necessary to comply with the legal, regulatory and economic environment. Council of the Institute of Chartered Accountants of India (ICAI) opined in May 2006 that adopting IFRS was considered and supported by the ASB. IFRS task force was set up to provide a road map for convergence and it decided to converge with IFRS from the accounting period commencing on or after 1 April 2011. In India, Ministry of Corporate Affairs carried out the process of convergence of Indian Accounting Standards with IFRS after a wide range of consultative process with all the stakeholders in pursuance of G-20 commitment and as result thirty five Indian Accounting Standards converged with International Financial Reporting Standards (henceforth called IND AS).

#### **STATEMENT OF PROBLEM**

As IFRS implementation is in process in India, and many problems have been arising in its implementation process. Many perceptions have been emerging regarding its adoption process, changes brought by it, comparability, disclosures, transparency etc. Thus, it becomes important to study the perception of the accounting professionals in India. Accounting system of any country has important responsibility to provide for recognition, measurement, presentation and disclosure requirements relating to transactions and events. The emphasis of this study is highlight the problems associated with the implementation process and suggest solutions for the same.

#### **SIGNIFICANCE OF THE STUDY**

IFRS implementation will have a serious impact on the Indian economy. Thus, with the help of the study, an attempt has been made to put some light on the following points:

1. Perceptions of chartered accountants towards implementation of IFRS in India.
2. Scope of IFRS bringing in transparency, disclosures, comparable aspects.

#### **OBJECTIVE OF STUDY**

The study is undertaken to analyse the perceptions of the chartered accountants with the following objectives in mind :

1. To study the Implementation Process of International Financial

Reporting Standards from the Chartered Accountants' perspective specifically with regard to

- (A) Transparency
- (B) Disclosures
- (C) Stakeholders' needs
- (D) Training

2. To study the problems of implementation of IFRS in India from the chartered accountants' perspective.

## **REVIEW OF LITERATURE**

The available literature on IFRS implementation mainly covers the data from the European countries which are at the advanced stage of implementation of IFRS in their respective countries. There are proponents as well as opponents who have arguments for and against the global adoption of IFRS. Only few studies are available which highlights the problems related to the implementation of IFRS in India. Most of the literature available on IFRS implementation in India is conceptual in nature without any empirical evidence. This section briefly reviews more recent empirical studies conducted to examine the perceptions of Chartered accountants regarding implementation of IFRS. The Securities and Exchange Commission (SEC) has the primary role in the progress and development towards adoption, using the Financial Accounting Standards Board (FASB) to accomplish the implementation. In September 2002, the SEC announced its support of the Norwalk Agreement. This agreement was formed between the FASB and the International Accounting Standards Board (IASB) to "develop high quality, compatible accounting standards that could be used for both domestic and cross-border financial reporting." This was the first step towards adoption; the initial full adoption date was set for April 2005. In April 2005, the SEC published a "Roadmap," a proposed timeline for adopting iGAAP, which included a series of key milestones. Leuz and Wüstemann, (2004) stated that the role of accounting is not so much to publicly disseminate information, but to facilitate relationship-based financing, for instance, by limiting the claims of outside shareholders to dividends, which protects creditors and promotes internal financing. Ball (2006) stated that many developing countries where the quality of local governance institutions is low, the decision to adopt IFRS will be beneficial. Kabir & Laswad (2007) contributed to the growing literature on the relative importance on accounting standards vs reporting incentives and institutional environments. They examined that accounting quality is jointly determined by accounting standards, reporting incentives and institutional environments. They also predicted that accounting quality will vary even under the IFRS regime. Callao et al. (2007) examined

on financial data of Spanish firms revealed that local comparability is adversely affected if both IFRS and local Accounting Standards are applied in the same country at the same time. The study, therefore calls for an urgent convergence of local Accounting Standards with that of IFRS. Jain (2007) tried to analyze the IFRS adoption procedure in India and the utility for India in adopting IFRS. He discussed the problems faced by the stakeholders (Regulators, Accountants, Firms etc) in the process of adoption of IFRS in India and presented the ways through which these problems can be addressed. Yadav & Sharma (2007) outlined that all parties concerned with financial reporting need to share the responsibility of international harmonization and convergence. IFRS is more a principle based approach with limited implementation and application guidance and moves away from prescribing specific accounting treatment, therefore, all accountants whether practicing or non-practicing have to participate and contribute effectively to the convergence process. Chand & White (2007) studied the convergence of Domestic Accounting Standards and IFRS and also demonstrated that the influence of Multinational Enterprises and large international accounting firms can lead to transfer of economic resources in their favour, wherein the public interests are usually ignored. Barth (2007), focused on the adoption of a common body of international standards is expected to have the following benefits: lower the cost of financial information processing and auditing to capital market participants as users, familiarity with one common set of international accounting standards instead of various local accounting standards by Accountants and Auditors of financial reports, comparability and uniformity of financial statements among companies and countries making the work of investment analysts easy, attraction of foreign investors in addition to general capital market liberalization. Ramanna & Sletten (2009) examined the heterogeneity in the countries decision to adopt International Financial Reporting Standards (IFRS). They used economic theory of networks to develop their hypothesis. They find that a country will be more likely to adopt IFRS if its trade partners or countries within in its geographical region are IFRS adopters. They had not confirmed that IFRS lowers information costs in more globalized economies. Pilcher & Dean (2009) determined the impact financial reporting obligations and, in particular, the International Financial Reporting Standards (IFRS) have on local government management decision making. In turn, this will lead to observations and conclusions regarding the research question: "Does reporting under the IFRS regime add value to the management of local government?" Jacob & Madu (2009) examined the academic literature on the quality of International Financial Reporting Standards (IFRS), formerly International Accounting Standards (IAS), which are poised to be the universal accounting language to be adopted by all companies regardless of their place of domicile. Hail,

Leuz & Wysocki (2009) considered how a switch to IFRS may affect worldwide competition among accounting standards and standard setters, and discuss the political ramifications of such a decision on the standard setting process and on the governance structure of the International Accounting Standards Board. The analysis shows that the decision to adopt IFRS mainly involves a cost-benefit trade off between recurring comparability benefits for investors & recurring future cost savings that will largely accrue to multinational companies. Ahmad & Khan (2009) stated that Adopting International Financial Reporting Standards (IFRS) by Indian Corporate is going to be very challenging but at the same time could be very rewarding. Convergence of standards will break the ice for convergence in other areas including auditing and help in efficient functioning of the economy because investors, creditors, auditors and other rely on credible, transparent and comparable financial information. Mustafayev (2009) opined that managements should consider accounting as the major tool of the decision making process. The adoption of IFRS is necessary in order to accomplish efficient and effective accounting system that is in consistency with the market economy. Together with the privatization and legal reforms, thorough accounting reforms also have to be performed in the transition to the market economy. Swamynathan & Sindhu (2009) stated that India has decided to move towards IFRS but still the mandatory switch over is not finalized. So they suggested ways to identify it like IFRS can be included as a subject, ensure consistency between various regulations and Accounting Standards converged with IFRSs. Cai & Wong (2010) in their study of global capital markets summarized that the capital markets of the countries that have adopted IFRS have higher degree of integration among them after their IFRS adoption as compared to the period before the adoption. Lin & Tanyi (2010) indicated that investors of U.S. companies in IFRS industries perceive the convergence benefit from IFRS adoption. Further evidence, however, shows that overall investors of U.S. companies welcomed the convergence projects between Financial Accounting Standards Board and International Accounting Standards Board but negatively reacted to the potential adoption of IFRS in the U.S. Siqui Li (2010) concluded that on average, the IFRS mandate significantly reduces the cost of equity for mandatory adopters. He also suggested in his research that this reduction is present only in countries with strong legal enforcement and that increased disclosures and enhanced information comparability are two mechanisms behind the cost of equity reduction. Chen et al. (2010) did a study of financial data of publicly listed companies in 15 member states of European Union (EU) before and after the full adoption of IFRS in 2005 thereafter found that the majority of Accounting Quality indicators improved after IFRS adoption in the EU and as there is less of managing earnings towards a target, a lower magnitude of absolute discretionary

accruals and higher accruals quality. The study also showed that the improved accounting quality is attributable to IFRS, rather than changes in managerial incentives, institutional features of capital markets and general business environment. Byard, Li & Yu (2011) stated that those foreign analyst who are familiar with IFRS do experience an incremental improvement in forecast accuracy relative to domestic analyst. They highlighted that both familiarity with IFRS and quality of countries enforcements environments play key roles in determining the extent to which information can be symmetrised between foreign and domestic analyst. Dholakia (2011) studied to identify and evaluate the materiality of the impact of IFRS adoption on companies' financial position, performance of the financial year, examine individual standards and its effect on shareholders' equity. Study suggested there is need to remember that convergence to a single set of globally accepted high quality standards is ultimately in the best interests of the public, contributing to efficient capital flows within countries and across borders. D'souza (2011) examined that India should converge to the IFRS as there is growing recognition and acceptance that reporting model in India should be much more aligned to IFRS. It is conveyed that adoption to IFRS is a goal that needs to be pursued more vigourously with discipline & in a defined time frame. Jarva & Lantto (2011) analysed that IFRS earnings provide marginally greater information content than Finnish Accounting Standards (FAS) earnings for predicting future cash flows. In the end of their study they suggested that strong institutional framework substitutes for high quality accounting standards. Ray (2011) examined that the return on equity, return on asset, total asset turnover and net profit ratios are not significantly affected by converging to IFRS but the leverage ratio shows significant change on converging with IFRS. CS Rastogi & Dr. Agarwal (2012) examined the effect of IFRS convergence will pose the significant challenges in front of banks involving higher disclosures by banks. It is a conceptual paper discussing various aspects of new accounting system and its comparison with the existing IAS with its effect on the financial statements of banks, describing the preparedness of Indian banks to adopt the new accounting system, the challenges before it and the areas on which the banks must focus on to adopt the system. Okpala (2012) examined that IFRS has been adopted in Nigeria but only fraction of companies has implemented with deadline for the others to comply. It is perceived that IFRS implementation will promote FDI inflows and economic growth. It was recommended that all stakeholders should endeavour to have full implementation to reap benefits of the global GAAP and principle - based standards. Leung & Joos (2012) tried to assess whether investors perceive the switch to IFRS as beneficial or costly. Study suggested that investors' reaction to IFRS adoption is more positive in cases where IFRS is expected to lead to convergence benefits and a less positive

market reaction for firms with higher litigation risk, which is consistent with investors' concerns about greater discretion and less implementation guidance under IFRS for these firms. Rusu (2012) provides an updated description of the process of IFRS adoption in the E.U. and worldwide, pointing out its effects on the information presented in financial statements, on the markets efficiency and on the accounting harmonization. GAB (2012) stated that one of the demerits that will be experienced by countries adopting of IFRS include: forgoing the benefits of any past and potential future innovations in local reporting standards specific to their economies.

### **RESEARCH METHODOLOGY**

In the process of achieving the objectives of the study, it is very important to follow a systematic scientific approach so as to present and interpret the results of the study or investigation conducted. The present study is the outcome of extensive efforts made after the formulation of the problem in accurate concerns after discussing it thoroughly with the experts which provided a direction to follow during the research process to achieve the objectives. The sample size in order to conduct the research was decided upon after a lot of deliberation on the nature of the research and the effect of various variables involved. For the research a sample of 200 from the state of Punjab were selected from the directory of Chartered Accountants and the respondents were mailed questionnaires through post and email but only 110 valid questionnaires were received and considered for analysis. All the respondents were contacted personally also through telephones, emails and in most of the cases physically to get their queries cleared about the purpose and intention of the survey to make the survey more accurate and error free. The sample was selected randomly from the directory of chartered accountants. The response rate was 55% of the questionnaires mailed. The sample is quite diversified in terms of age of respondents, almost chartered accountants of all age were included in the sample. Majority (75%) of respondents lie in age group of 20-50 and 25% respondent are greater than age of 50 in the sample. This enhances the validity of the survey. The survey questionnaire was designed in such a way that it addressed the perception of chartered accountants clearly. Questionnaire was kept on the basis of five point Likert scale only, so that analysis part could be facilitated. Likert summated rating method has been used and reverse scoring was carefully done while calculating the summated scores for negative sentences. Prior to the questionnaire was frozen and administered, constant dialogue by the authors with experts and practising chartered accountants helped in getting valuable inputs and feedback on the effectiveness of the questionnaire. The data collected have been analysed using the Statistical Package for Social Sciences (SPSS)

version 20.0 . The data analysis begins with categorizing and evaluating the collected data after collecting the filled questionnaires. Factor analysis has been used to analysed the responses of the charetered Accountants . Before using the factor analysis for data reducation , reliability analysis has been performed in order to identify how each item in the questionnaire relates to each other. Cronbach's Alpha for data reliability is an important step to make sure that the quality of the questions is good and it allows avenue for further research. A questionnaire can be deemed to be reliable when it provides consistent scores in each measurement. Before making further analysis both Bartlett test of Sphericity and Keiser-Meyer-Olkin (KMO) test were applied to examine the correlation of the different variable of the assumption and also whether conducting factor analysis was appropriate. Principal component analysis was used for factor extraction. This method studies the spatial distribution of the objects so as to identify groupings and the relationships between them. The first factor extracted is the one that accounts for the maximum possible variance in the data set. The second component, independent of the first, will be the one that explains the greatest possible share of the remaining variance, and so on, without the components being correlated with each other. The choice of the number of factors was first based on the Kaiser criterion, namely eigenvalues over 1.0. This is the most frequently used criterion in factor analysis, and the theoretical basis behind it is that each retained factor should explain more variance than the original variable in the data set. The choice of the number of factors was first based on the Kaiser criterion, namely eigenvalues over 1.0. This is the most frequently used criterion in factor analysis, and the theoretical basis behind it is that each retained

**Table 2****KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	0.531
Bartlett's Test of Sphericity	
Approx. Chi-Square	780.902
df	231.00
Sig.	.000

factor should explain more variance than the original variable in the data set.

The results of the Bartlett's test of sphericity and the value of KMO were both statistically significant. KMO measure of sampling adequacy of this study is considered to be good or significant. There is no need for remedial action.

The communalities for the  $i$ th variable are computed by taking the sum of the squared loadings for that variable. This is expressed below :

**Table 3**  
**Communalities**

	<b>Initial</b>	<b>Extraction</b>
1. Accounting Harmonisation-A tool for Developing Global Economy	1.000	.690
2. Accounting harmonisation reduce the gap between different accounting Systems in each country	1.000	.535
3. Accounting harmonisation encourage global economic activities	1.000	.894
4. IFRS Adoption ensures comparable accounting figures	1.000	.584
5. IFRS adoption ensures higher quality disclosures	1.000	.780
6. IFRS adoption ensures more information additional disclosures	1.000	.690
7. IFRS adoption ensures more value relevant accounting	1.000	.784
8. IFRS adoption results in difficult financial statements	1.000	.803
9. IFRS leads to efficient monitoring by shareholders	1.000	.793
10. IFRS leads to efficient monitoring by creditors and ensures better creditor protection	1.000	.833
11. IFRS leads to more cost less benefits	1.000	.633
12. Fair value accounting has strong impact on accounting figures	1.000	.762
13. Adoption of Fair value accounting is a costly affair	1.000	.428
14. The adoption of Fair Value results in more value relevant accounting figures	1.000	.753
15. IFRS implementation is costly Information systems have to be reorganised, the information required by IFRS being not available in its entirety	1.000	.731
16. The information required by IFRS will be available but it has to be reprocessed in depth	1.000	.618
17. It will require in-depth training of people involved in the adoption process	1.000	.732
18. The lack of clarity of several IFRS standards will require in-depth analysis and interpretations of these standards	1.000	.827
19. Will require a specific training because these standards differ significantly from those used previously	1.000	.747
20. Will be complex because of accounting figures that they were not easily comparable with those disclosed in the previous statements	1.000	.754
21. Switching to IFRS Will increase the time spent to process accounting information and financial statements	1.000	.599
22. Switching to IFRS Will improve the relevance of our forecasts forecasts & recommendations	1.000	.817

Extraction Method : Principal Component Analysis.

**Table 4**  
**Total Variance Explained**

Component	Initial Eigenvalues		Extraction Sums of Squared Loadings		Rotation Sums of Squared Loadings	
	Total	% of Variance	Total	% of Variance	Total	% of Variance
1	3.845	17.478	3.845	17.478	3.514	15.971
2	3.084	14.016	3.084	14.016	2.880	13.093
3	2.697	12.258	2.697	12.258	2.263	10.286
4	1.859	8.449	1.859	8.449	2.168	9.856
5	1.653	7.513	1.653	7.513	1.913	8.694
6	1.517	6.898	1.517	6.898	1.591	7.231
7	1.130	5.137	1.130	5.137	1.456	6.619
8	.910	4.138				
9	.815	3.703				
10	.744	3.384				
11	.648	2.947				
12	.578	2.629				
13	.463	2.103				
14	.406	1.844				
15	.354	1.609				
16	.326	1.480				
17	.308	1.398				
18	.207	.939				
19	.133	.603				
20	.131	.594				
21	.126	.573				
22	.067	.306				
		100.000				

Extraction Method : Principal Component Analysis.

$$\hat{h}_i = \sum_{j=1}^m \hat{l}_{ij}^2$$

The communality for a given variable can be interpreted as the proportion of variation in that variable explained by the factors.

Next comes a table showing the importance of each of the all 22 principal components. Only the first seven have eigenvalues over 1.00, and together these explain over 71.750 % of the total variability in the data. This leads us to the conclusion that a seven factor solution will probably be adequate.

### **NAMING OF THE FACTORS**

As shown in the Table 5 the factor analysis has extracted seven factors which are named as follows :

1. Relevance of Fair Value
2. Complexity and Cost
3. Harmonisation and Additional Disclosure
4. Monitoring and Global Economic Activity
5. Comparable accounting with higher disclosure but with complexity and cost 5
6. Future Fore-casting
7. Impact of Fair Value Accounting

#### **Component 1 : Relevance of Fair Value**

Rotated Component Matrix shows that it is the most important factor which explains 17.478% of variations. The three parameters representing the added value to the accounting figures, difficult financial statements and value relevance to the accounting are grouped under this component. The factor loadings to this component are .852, .834 and .771 and considered to be very strong because all the factor loadings are greater than .50 and highly significant. This shows that professional accountants considered Fair Value as highly relevant because it add value to the accounting figures. The Professional Accountants are also of the strong view that the adoption of Fair Value will make financial statements difficult to understand which need to be simplified in the further drafts of IFRS to make them more value relevant for the stake-holders of accounting information. It shows that accountants has apprehensions about the "Concept of Fair Value" in their mind which needs to be corrected either through training and development or through more explanations in the Reporting standards.

#### **Component 2 : Complexity and Cost**

**Table 5**  
**Rotated Component Matrix (a)**

	Component						
	Fair Value Relevance	Complexity and Cost	Harmonisation and Additional Disclosure	Monitoring and Global Economic Activity	Comparable accounting with higher disclosure but with complexity and cost	Future Forecasting	Impact of Fair Value Accounting
The adoption of Fair Value results in more value relevant accounting figures	.852						
IFRS adoption results in difficult financial statements	.834						
IFRS adoption ensures more value relevant accounting	.771						
Will require a specific training because these standards differ significantly from those used previously		.842					
Will be complex because of accounting figures that they were not easily comparable with those disclosed in the previous statements		.817					
IFRS implementation is costly Information systems have to be reorganised, the information required by IFRS being not available in its entirety		.713					
Switching to IFRS Will increase the time spent to process accounting information and financial statements		.542					
IFRS adoption ensures more information additional disclosures			.691				

Contd. Table 5

Accounting Harmonisation-A tool for Developing Global Economy					.660					
Accounting harmonisation encourage global economic activities					.611					
Accounting harmonisation reduce the gap between different accounting Systems in each country					.576					
Accounting harmonisation encourage global economic activities						.871				
IFRS leads to efficient monitoring by creditors and ensures better creditor protection						.865				
IFRS Adoption ensures comparable accounting figures							.719			
IFRS adoption ensures higher quality disclosures							.626			
IFRS adoption results in difficult financial statements							.608			
IFRS leads to more cost less benefits							.570			
Switching to IFRS Will improve the relevance of our forecasts & recommendations								.889		
It will require in-depth training of people involved in the adoption process								.489		
The information required by IFRS will be available but it has to be reprocessed in depth									.718	
Fair value accounting has strong impact on accounting figures										.660
Adoption of Fair value accounting is a costly affair										.353

Extraction Method : Principal Component Analysis. Rotation Method : Varimax with Kaiser Normalization. Rotation converged in 12 iterations.

This factor explains 14.016% of variations. The four parameters which focusses on training needs for implementation, complexity of preparing the financial statements costly information system for its implementation and time consuming process . The factor loadings for these parameters are .842, .817, .713 and .542 are considered to be strong which explains that professional accountants considered the dire need for training and development in the field of IFRS Implementation. The cost factor need to be minimised by removing the complexity of the information system and timely presentaiton of the financial information . This require the efforts of the accounting and professional bodies to work .

### **Component 3 : Harmonisation and Additional Disclosure**

This factor explains the 12.258% of variations. The four parameters representing the factor focussed on strong view of the professional accountants regarding the assurance of additional disclosure, increase in global economic activity, a tool for developing global economy and an instrument to reduce the gap between the various accoutnign practices pravelent in the world. The factor loadings of various parameters are .691, .660, .611 and .576 are considered to be very strong which explains the relevance of IFRS in promoting harmonisation and additional disclosure.

### **Component 4 : Monitoring and Global Economic Activity**

This factor explains the 8.449% of variations. The two parameters representing the factor focussed on increased global economic activity through monitoring by the providers of capital i.e Creditors. The factor loadings of various parameters are .871 and .865 and considered to be very strong which explains the urgency of implementation of these standards .

### **Component 5 : Comparable Accounting with Higher Disclosure but with Complexity and Cost**

This factor explains the 7.513% of variations. The four parameters representing the factors focussed on assurance of comparable accounting figures, high quality disclosoures, complexity of financial statements and high cost. The factor loadings of various parameters are .719, .626, .608 and .570 which are considered to be high . It explains the agreement of the professional accountants that IFRS implementation is sure to promote comparability of accounting statements with high quality disclosure but apprehensions regarding the aspect of complexity of information and cost factor remains which need to be addressed.

### **Component 6 : Future Forecasting**

This factor explains the 6.898% of variations. The two parameters representing this factor are future forecast and recommendations and training needs. The professional accountants are of the strong view and agree that implementation of IFRS will ensure that accounting information supplied by the IFRS compatible accounting statements will provide tools for better future forecast and recommendations but their opinion over the indepth training needs for IFRS implementation are divided.

### **Component 7 : Impact of Fair Value Accounting**

This factor explains 5.317% of variance. The parameters representing this factor are indepth reprocessing of information , strong impact on accounting figures and its related cost. The chartered accountants agreed that adoption of fair value accounting will result in indepth reprocessing of information (factor loading .718) and it will have great impact on the disclosure practices (.660) but a small segment of chartered accountants has worries about the cost factor relating to the implementation of fair value accounting (factor loading less than 0.5 i.e .353).

## **CONCLUSION AND RECOMMENDATIONS**

The study is concluded with following observations and recommendations :

1. The chartered accountants are aware about the relevance of concept of "fair value" but they have lot of misconceptions and apprehensions about the its conceptual meaning which need more training to the professional accountants in terms of conceptual clarity, implementation methodologies and clarity about making the accounting information more disclsoure based with less complexity.
2. This study shows that most of the CA's considered convergence as better option with reference to the Indian context rather than full fledges adoption of IFRS.
3. The chartered accountants agree on the notion that, IFRS implementation in India is done due to its future orientation, not merely because of its fame, it is going to provide better future for India in the global environment.
4. All the respondents perceived that there is more cost involved in the initial implementation of the IFRS, but afterwards there will be more benefits in the future. Most of the respondents have perceived that

deferment of IFRS on the year-to-year basis is making India to lose its shine in globalised world.

Following recommendations could be quoted with regard to the IFRS implementation in India. These recommendations have been as follows :-

1. Proper training & resources should be imparted to those who have been involved in the IFRS adoption process.
2. More awareness should be imparted to the industry with regard to the benefits attached to IFRS implementation.
3. Converged accounting standards be given, and these should be implemented at the earliest.
4. Present dilution under AS 11 should be continued in IFRS also and fair value accounting norms should be relaxed in the context of smaller companies.
5. More sincere effort should be done by the government for the clarity in the minds of the industry people regarding implementation of IFRS in India.
6. More efforts should be made by the Government to escalate the early implementation of IFRS in India.
7. More disclosure on related party transactions, disclosure on movement of equity, recording of assets and liabilities at fair value and easy to understand framework of financial statements.
8. Implementation of IFRs should not be deferred for the better future of India.
9. Indian economic culture & business environment should be taken into consideration for convergence with IFRS.
10. Adoption of IFRS is better as future accounting system but more efforts should be made to Educate and trains the relevant sections of the society.

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## **Disclosure Practices of Companies in India : A Comparative Study of Public and Private Sector**

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### **Abstract**

In today's globalised world, it is the responsibility of the business to make the public aware about the different activities undertaken during the period. Therefore, disclosure is of utmost importance in these days. Since disclosure represents transparency of company's activities, companies disclosing more information are always preferred. This paper empirically examines the disclosure practices of 19 public sector and 23 private sector companies in India for the period 2003-04 to 2010-11. The companies have been selected on the basis of their market capitalization from BSE-500 index. This paper analyses the company wise variation in the disclosure practices of public sector and private sector companies on the basis of disclosure index consisting of 101 items (99 items are applicable on private sector) representing the different areas of disclosure by the companies in their annual reports, with the help of statistical tools i.e. mean, percentage analysis, standard deviation, coefficient of variation and t-test.

### **Key Words**

Disclosure, Public Sector, Private Sector, Variations, Annual Reports.

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### **INTRODUCTION**

In today's globalised world, it is the responsibility of the business to make the public aware about the different activities undertaken during the period. Therefore, disclosure is of utmost importance in these days. Since disclosure represents transparency of company's activities, companies disclosing more information are always preferred. Though there are several ways to disclose such information,

annual reports are more comprehensive in this regard. Corporate disclosure is the process of disseminating financial and non-financial information among the different users i.e. shareholders, creditors, bankers, employees, interested potential investors and general public. As every listed company is required to publish its annual report which discloses the results of accounting period (normally for a financial year), it becomes a regular source of information for the users. In India, disclosure practices of both public and private sector companies are governed by various laws such as Companies Act and regulatory bodies like Securities and Exchange Board of India, Bureau of Public Enterprises, Institute of Chartered Accountants of India etc. In addition to it, the management philosophy on disclosure differs from concern to concern. As a result, differences are found in the disclosure practices of various companies. This has been highlighted in many empirical, descriptive and qualitative studies carried out in the field of corporate disclosure by various research scholars. Some of these studies have been briefed below.

Gupta, J. L. (1983) analyzed the inventory valuation disclosure practices of 100 (consists of 80 private and 20 public sector) engineering companies for the year 1979-80. He studied the issues like composition of product cost, basis of valuation, cash flow assumptions, treatment of excise duty and overhead accounting policy. The study revealed that 60 per cent public and 10 per cent private sector companies were disclosing the accounting policy for inventory valuation. The study highlighted that public sector undertakings disclosed more information relating to accounting policies.

Chander, Subhash (1992) in his study examined and compared disclosure practices of public and private sector companies in India. The study was based on a sample of 50 public sector and 50 private sector companies for the period 1980-81 to 1984-85. The study showed that the quality of reporting analyzed on the basis of 'company-wise disclosure' was significantly better in case of public sector in comparison to private sector companies.

Behl, R.L. (2008) conducted a study to examine company-wise disclosure level of 92 Indian companies from BSE-500 index for the period of five years i.e. 2000-01 to 2004-05. The study highlighted that over the period of five years, 85 companies had shown positive compound growth rate and 7 companies had negative compound growth rate. It showed an improvement in the corporate voluntary disclosure scores from 2000-01 to 2004-05.

Singh, Prakash (2008) evaluated the social responsibility disclosure practices of 50 Indian companies (both public as well as private sector) for two years i.e. 2000 and 2004. The study revealed that the disclosure of social information was more in public sector as compared to private sector companies.

Shah, Pragnesh (2009) studied the voluntary disclosure practices of 28 companies in respect of human resources accounting information. It highlighted that Indian companies did not follow a uniform policy for its disclosure and very little attention was provided to the variables, more important for decision making.

Dangwal, R.C., Singh, Kashmir and Anand, Swati (2010) found large differences in the voluntary disclosure practices of large and mid-cap companies in their study conducted on the basis of index of disclosure consisting of 72 reporting items for the period 1999-2000 to 2004-05.

Ragini (2012) examined and compared the various disclosure practices of intangibles of the top 100 Indian, US and Japanese companies for a period of five years i.e.2001-2005. It showed that all the countries under study had a significant improvement over the period. It further revealed that the Indian companies disclosed more information on research and development and human resources than the companies from US and Japan. Japanese companies showed maximum improvement in the overall disclosure score over the period of five years.

#### **OBJECTIVES OF THE STUDY**

The present paper is an attempt to make company-wise analysis of disclosure practices of public and private sector companies in India and to find out the differences in disclosure practices of selected public and private sector companies.

#### **RESEARCH METHODOLOGY**

The study is based on 42 Indian companies included in BSE 500 index (19 from public sector and 23 from private sector) from five industries namely Oil Drilling & Exploration and Refineries, Power Generation and Distribution, Metals & Minerals, Chemicals & Fertilizers and Heavy Engineering. It covers the period of eight years i.e. from 2003-04 to 2010-11 and is based on the secondary data collected from the annual reports of the respective companies. Company-wise a disclosure score sheet has been prepared on the basis of disclosure index consisting of 101 items (99 items are applicable on private sector). For scoring, both unweighted scoring method (which assigns equal weightage to all the items of disclosure index) and weighted scoring methods have been used. Unweighted scoring method assigns score one for the items disclosed in annual reports and zero for the items not disclosed in annual reports, for all the items of disclosure index except for eight items namely schedules, notes to accounts, accounting policies, use of charts/graphs, past year dividend statistics, financial ratios, financial highlights regarding past and production statistics. These items have been assigned weights as under :

(a)	No. of Schedule	Weight
	Upto 20	1
	More than 20	2
(b)	Notes to accounts	
	Upto 20	1
	From 21 - 30	2
	Above 30	3
(c)	Accounting policies	
	Upto 10	1
	More than 10	2
(d)	Use of charts/graphs	
	Upto 10	1
	More than 10	2
(e)	Past year dividend statistics	
	Upto 5 years	1
	More than 5 years	2
(f)	Financial ratios	
	Upto 10	1
	More than 10	2
(g)	Financial highlights regarding past	
	Upto 10 years	1
	More than 10 years	2
(h)	Production statistics	
	Upto 5 years	1
	More than 5 years	2

The maximum score applicable to the public sector companies and private sector companies is 110 and 108 respectively because two items ( Comments of Comptroller and Auditor General of India and Guidelines of Bureau of Public Enterprises) in the disclosure index are not applicable on private sector. For the analysis, statistical tools namely mean, percentage analysis, standard deviation, coefficient of variation and t-test have been applied. Disclosure score for all the years of the study for each company in public and private has been calculated by applying the following formula :

$$1. \quad \text{Disclosure score} = \frac{\text{Total scores obtained by a company}}{\text{Total scores applicable to that company}} * 100$$

2. Mean disclosure score =  $\Sigma X/N$

Where,  $\Sigma X$  = Sum of all the values of variable x (i.e. disclosure score from 2003-04 to 2010-11)

N = Total number of observations

For the study of disclosure of companies in the public and private sector, the following null hypothesis has been formulated, which has been tested by applying t-test at 5 per cent level of significance.

H<sub>0</sub> : There is no significant difference in the company wise disclosure practices of public and private sector companies in India.

### ANALYSIS

Table 1 presents disclosure score of 19 public sector companies from 2003-04 to 2010-11 and shows ranks of the companies on the basis of disclosure score in the descending order. The table also depicts the increase/decrease in the disclosure score in 2010-11 over 2003-04. The analysis of the table reveals that out of total 19 companies, 18 companies have shown increase in disclosure score in 2010-11 over the year 2003-04 whereas one company has shown decrease in disclosure score in 2010-11 in comparison to 2003-04.

In terms of disclosure score, most of the companies have fluctuating trend over the period. There are only two companies which have shown continuous increase in the disclosure score over the period i.e. NTPC (41.81 per cent in 2003-04 to 70.91 per cent in 2010-11) and BHEL (59.09 per cent in 2003-04 to 77.27 per cent in 2010-11). Further, 16 companies have increase in disclosure score over the period but with fluctuations during the period. Rashtriya Chemicals & Fertilizers Limited has the maximum increase in disclosure score i.e. 77.81 per cent. Bharat Earth Movers Ltd. is the only public sector company which has shown decline in the disclosure score i.e. 50.91 per cent in 2003-04 to 46.36 per cent in 2010-11.

As the study reflects the fluctuations in the disclosure score obtained in the different years by different companies, therefore major changes can be observed in the ranks obtained by the different companies in the different years. Some company's show improvement whereas others show either decline or constant ranks in the year 2010-11 over 2003-04. BHEL has obtained the first rank in most of the years of the study except 2003-04, 2005-06 and 2006-07. In these years, it is on the second rank. There is a remarkable improvement in the ranks of ONGC (from 7th to 3rd), GAIL (from 10th to 2nd), Indian Oil (from 5th to 3rd), Power Grid Corporation (from 8th to 4th), SAIL (from 9th to 6th), NMDC (from 9th to 4th), NALCO (from 13th to 7th), Rashtriya Chemicals and Fertilizers Ltd. (from 15th to

**Table 1**  
**Company-wise Disclosure scores of Public Sector (in percentage)**

S. No.	Name of the Company	Disclosure Score										% Increase or decrease in 2010-11 over 2003-04
		2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	Increase or decrease in 2010-11 over 2003-04		
1.	ONGC	51.81 (7)	55.45 (4)	54.55 (7)	63.64 (5)	65.45 (4)	60.91 (7)	63.64 (4)	69.1 (3)	17.29	33.37	
2.	GAIL	47.27 (10)	49.09 (8)	63.64 (3)	65.45 (3)	68.18 (2)	71.81 (2)	71.81 (2)	70.91 (2)	23.64	50.01	
3.	Oil India	57.27 (3)	58.18 (2)	56.36 (6)	47.27 (11)	50 (12)	51.81 (14)	60 (7)	61.81 (5)	4.54	7.93	
4.	Indian Oil	55.45 (5)	55.45 (4)	62.73 (4)	62.73 (6)	66.36 (3)	65.45 (4)	67.27 (3)	69.1 (3)	13.65	24.62	
5.	BPCL	56.36 (4)	54.55 (5)	66.36 (1)	68.18 (2)	62.73 (6)	60 (8)	61.81 (5)	62.73 (4)	6.37	11.3	
6.	NTPC	60 (1)	61.81 (1)	63.64 (3)	64.54 (4)	64.54 (5)	67.27 (3)	67.27 (3)	70.91 (2)	10.91	18.18	
7.	Power Grid Corporation	50.91 (8)	50 (7)	41.81 (13)	49.09 (9)	50.91 (11)	62.73 (5)	61.81 (5)	62.73 (4)	11.82	23.22	
8.	NHPC	41.81 (14)	40.91 (11)	41.82 (13)	45.45 (12)	50 (12)	53.66 (13)	58.18 (9)	56.36 (11)	14.55	34.8	

Contd. Table 1

9.	Neyveli Lignite	46.36 (11)	56.36 (3)	55.45 (7)	52.73 (7)	53.66 (10)	56.36 (12)	58.18 (9)	58.18 (9)	58.18 (9)	11.82	25.5
10.	SJVN	32.72 (15)	32.72 (13)	34.54 (15)	34.54 (14)	37.27 (14)	37.27 (17)	37.27 (14)	37.27 (14)	36.36 (14)	3.64	11.12
11.	SAIL	49.09 (9)	55.45 (4)	58.18 (5)	69.09 (1)	62.73 (6)	61.81 (6)	60.91 (6)	60.91 (6)	60.91 (6)	11.82	24.08
13.	NMDC	49.09 (9)	49.09 (8)	50 (11)	54.55 (6)	58.18 (7)	53.66 (13)	60.91 (6)	60.91 (6)	62.73 (4)	13.64	27.79
14.	NALCO	43.64 (13)	42.72 (10)	42.72 (12)	52.73 (7)	56.36 (9)	58.18 (9)	59.09 (8)	59.09 (8)	60 (7)	16.36	37.49
15.	NFL	45.45 (12)	46.36 (9)	51.81 (10)	51.81 (8)	57.27 (8)	57.27 (10)	55.45 (10)	55.45 (10)	59.09 (8)	13.64	30.01
16.	Rashtriya Chemical & Fertilizers Ltd.	32.72 (15)	42.72 (10)	41.81 (13)	48.18 (10)	50 (12)	55.45 (11)	55.45 (10)	55.45 (10)	58.18 (9)	25.46	77.81
17.	BEMIL	50.91 (8)	52.73 (6)	52.73 (9)	48.18 (10)	49.09 (13)	46.36 (15)	46.36 (12)	46.36 (12)	46.36 (12)	-4.55	-8.94
18.	Engineers India Ltd.	54.55 (6)	55.45 (4)	54.55 (8)	54.55 (6)	58.18 (7)	57.27 (10)	49.09 (11)	49.09 (11)	57.27 (10)	2.72	4.99
19.	BHEL	59.09 (2)	61.81 (1)	65.45 (2)	68.18 (2)	69.09 (1)	76.36 (1)	76.36 (1)	76.36 (1)	77.27 (1)	18.18	30.77

Note : Figures in parenthesis show the ranks

9th) and NFL (from 12th to 8th) during the period 2003-04 to 2010-11. There is a decline in the disclosure score of BEML in the year 2010-11 over 2003-04 (i.e. from 50.91 per cent to 46.36 per cent). Therefore ranking of the company has declined from 8th to 12th in the year 2010-11.

Disclosure scores of Oil India, NTPC and Engineers India Ltd. show improvement over the period but ranks of the companies have declined during the study period i.e. Oil India (from 3rd to 5th), NTPC (from 1st to 2nd) and Engineers India Ltd. (from 6th to 10th). There is no change in rank of BPCL in 2010-11 over 2003-04 i.e. 4th rank in terms of disclosure score.

Tables 2 indicates disclosure scores of 23 private sector companies from 2003-04 to 2010-11. It also shows ranks of the companies on the basis of disclosure score in the descending order. The table highlights the increase/decrease in the disclosure score in 2010-11 over 2003-04. After an analysis of the table, it is evident that out of total 23 companies, 21 have shown improvement in disclosure score in 2010-11 over the year 2003-04. whereas two companies have shown no improvement in the disclosure score in 2010-11 over 2003-04.

Analysis of the table reveals that majority of the private sector companies have shown fluctuating trend during the period of eight years. Major percentage increase in disclosure score been observed in case of Petronet LNG by 105.28 per cent, GVK Power and Infrastructure Ltd. by 86.99 per cent, Jai Prakash Power by 46.16 per cent, Sesa Goa by 43.48 per cent, Tata Power by 51.09 per cent. There are only two companies i.e. Tata Steel Ltd. and Larsen & Toubro Ltd. which have not shown improvement in disclosure scores in 2010-11 over 2003-04 but rank-wise these companies have good standing in comparison to other private sector companies with improvement in disclosure score.

Rank of Tata Power Co. Ltd. has shown remarkable improvement (from 10th to 4th) over the period. Other companies whose ranks have shown improvement are Hindalco (3rd to 1st), Reliance Industries Ltd. (4th to 3rd), Petronet LNG (17th to 13th), Jindal Steel (9th to 6th) and Sesa Goa (9th to 5th). There is no change in the ranks of Jai Prakash Power (14th), Sterlite Industries (5th), Tata Chemicals (7th) and Sanghvi Movers (15th) in 2010-11 over 2003-04 but during the period of eight years, wide fluctuations have been observed in the ranks of these companies.

On the other hand, ranks of Tata Steel (2nd to 3rd), Larsen and Toubro (1st to 2nd), United Phosphorus (8th to 9th), Coromendal International (7th to 8th), Bayer Crop Science (6th to 8th), Chambal Fertilizers (6th to 10th) reflect the decline in ranks obtained in spite of increase in the disclosure score over the period.

**Table 2**  
**Company-wise Disclosure Scores of Private Sector (in percentage)**

S. No.	Name of the Company	Disclosure Score											Increase or decrease in 2010-11 over 2003-04	% Increase or decrease in 2010-11 over 2003-04
		2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11					
1.	Reliance Industries Ltd.	55.55 (4)	59.26 (3)	71.29 (1)	68.52 (1)	69.44 (1)	62.96 (3)	61.11 (4)	63.89 (3)	8.34	15.01			
2.	Essar Oil	37.96 (11)	39.81 (12)	41.67 (12)	40.74 (10)	42.59 (12)	41.67 (13)	41.67 (14)	46.29 (10)	8.33	21.94			
3.	Petronet LNG	17.59 (17)	27.77 (16)	28.7 (16)	29.63 (15)	30.55 (16)	32.41 (16)	31.48 (17)	36.11 (13)	18.52	105.28			
4.	Aban Offshore	37.96 (11)	40.74 (11)	51.85 (5)	50 (7)	49.07 (9)	49.07 (10)	50 (11)	50 (10)	12.04	31.72			
5.	Indraprastha Gas	34.26 (13)	34.26 (15)	34.26 (15)	35.18 (12)	33.33 (15)	33.33 (15)	39.81 (15)	41.67 (11)	7.41	21.63			
6.	GVK Power & Infrastructure Ltd.	21.29 (16)	22.22 (18)	22.22 (17)	31.48 (14)	33.33 (15)	33.33 (15)	35.18 (16)	39.81 (12)	8.52	86.99			
7.	CESC	36.11 (12)	38.89 (13)	38.89 (13)	38.89 (11)	38.89 (14)	42.59 (12)	43.52 (13)	50 (10)	13.89	38.46			
8.	Jai Prakash Power	24.07 (14)	25 (17)	28.7 (16)	30.55 (13)	33.33 (15)	35.18 (14)	35.18 (16)	35.18 (14)	11.11	46.16			
9.	Gujarat Ind. Power Co.	10.18 (18)	10.18 (19)	10.18 (18)	10.18 (17)	11.11 (18)	12.04 (18)	12.04 (19)	12.04 (16)	1.86	18.27			
10.	Tata Power	41.67 (10)	42.59 (10)	50.93 (6)	50.93 (6)	51.85 (7)	50.93 (9)	51.85 (9)	62.96 (4)	21.29	51.09			
11.	Tata Steel	63.89 (2)	61.11 (2)	60.18 (4)	68.52 (1)	68.52 (2)	63.89 (2)	69.44 (1)	63.89 (3)	0	0			

Contd. Table 2

12.	Jindal Steel	42.59 (9)	42.59 (10)	48.15 (10)	47.22 (9)	48.15 (10)	47.22 (9)	48.15 (10)	60.18 (4)	61.11 (4)	59.26 (6)	16.67	39.14
13.	SESA Goa	42.59 (9)	42.59 (10)	42.59 (11)	49.07 (8)	50 (8)	56.48 (6)	61.11 (5)	61.11 (4)	61.11 (4)	61.11 (5)	18.52	43.48
14.	Sterite Ind. (India) Ltd.	48.15 (5)	48.15 (6)	50 (7)	53.7 (4)	53.7 (6)	56.48 (6)	61.11 (5)	56.48 (6)	56.48 (5)	61.11 (5)	12.96	26.91
15.	HINDALCO	56.48 (3)	58.33 (4)	64.81 (2)	65.74 (2)	65.74 (3)	66.67 (1)	66.67 (2)	66.67 (1)	66.67 (2)	66.67 (1)	10.19	18.04
16.	Tata Chemicals	44.44 (7)	41.67 (10)	41.67 (12)	47.22 (9)	47.22 (11)	53.7 (7)	54.63 (6)	53.7 (7)	54.63 (6)	55.55 (7)	11.11	25
17.	United Phosphorus Ltd.	43.52 (8)	44.44 (9)	50 (7)	50.93 (6)	51.85 (7)	52.78 (8)	52.78 (8)	52.78 (8)	52.78 (8)	50.93 (9)	7.41	17.03
18.	Coromendal Fertilizers	44.44 (7)	45.37 (8)	50 (7)	52.78 (5)	51.85 (6)	50.93 (9)	50.93 (10)	50.93 (9)	50.93 (10)	53.7 (8)	9.26	20.84
19.	Bayer Crop Science	47.22 (6)	49.07 (5)	49.07 (8)	49.07 (8)	53.7 (6)	53.7 (7)	53.7 (7)	53.7 (7)	53.7 (7)	53.7 (8)	6.48	13.72
20.	Chambal Fertilizers	47.22 (6)	46.29 (7)	46.29 (9)	50.93 (6)	56.48 (5)	57.41 (5)	50 (11)	50 (11)	50 (11)	50 (10)	2.78	5.89
21.	Larsen & Toubro	64.81 (1)	62.96 (1)	62.96 (3)	62.04 (3)	62.04 (4)	60.18 (4)	62.96 (3)	62.96 (3)	62.96 (3)	64.81 (2)	0	0
22.	Sanghvi Movers	22.22 (15)	22.22 (8)	22.22 (17)	28.7 (16)	29.63 (17)	28.7 (17)	28.7 (18)	28.7 (17)	28.7 (18)	27.78 (15)	5.56	25.02
23.	Alfa Laval	37.96 (11)	37.04 (14)	37.96 (14)	38.89 (11)	40.74 (13)	44.44 (11)	44.44 (12)	44.44 (11)	44.44 (12)	46.09 (10)	8.33	21.94

Note : Figures in parenthesis show the ranks

**Table 3**  
**Mean Disclosure Score for Public and Private Sector Companies**

Years	Public Sector			Private Sector			t-value
	Mean	S.D.	C.V.	Mean	S.D.	C.V.	
2003-04	48.23	8.66	17.96	40.09	13.99	34.89	2.205*
2004-05	50.38	8.23	16.33	40.98	13.24	32.31	2.691*
2005-06	52.44	9.86	18.80	43.68	14.76	33.79	2.209*
2006-07	54.59	10.39	19.03	45.69	14.18	31.04	2.276*
2007-08	56.36	8.98	15.95	46.56	14.06	30.13	2.598*
2008-09	57.7	9.43	16.35	47.78	13.56	28.38	2.692*
2009-10	58.47	9.89	16.91	48.47	13.74	28.35	2.653*
2010-11	60.19	9.91	16.47	50.11	13.47	26.88	2.709*

\*t - Value is significant at 5% level of significance

Table 3 depicts the mean disclosure scores of public and private sector for the eight years of study along with the values of standard deviation, co-efficient of variation and t-value. The mean disclosure scores of both public and private sector show continuous increase in disclosure but disclosure is more in public sector companies for all the years. The higher values of standard deviation in case of private sector reveal wide variations in the disclosure of private sector companies corresponding to public sector. The t-value depicts that there are significant difference in disclosure practices of public sector and private sector companies for all the years as calculated t-values are more than table value at 5 per cent level of significance.

## CONCLUSION

The study reveals that in the public sector BHEL, NTPC and GAIL have better disclosure scores in comparison to other public sector companies. However in the private sector Tata Power, Tata Steel, Reliance Industries and Hindalco have higher disclosure scores in most of the years of the period of study. Further, significant differences have been found in disclosure practices of public sector and private sector companies in India. The study shows continuous increase in the disclosure by both the sectors over the period of study but comparative analysis reveals that disclosure is more in public sector companies than private sector companies.

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## **Adoption of Internet Banking Amidst Competitive Times : A Study on Hisar Dist. of Haryana**

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### **Abstract**

The Indian banking sector has evolved some innovative services for their customers to meet the requirements of privatization and globalization of financial sector. One of such services is online banking which aims to benefit both banks as well as customers. The present research study is an attempt to investigate the factors that influence the adoption of online banking in the Hisar district of Haryana. The study employs factor analysis technique to determine the factors that are considered important while ascertaining adoption of internet banking by the sample respondents and to know whether they feel satisfied with the e-banking services provided by their banks. The study shows that there are seven factors: Perceived Inconvenience, Service Quality, User-Input Factors, Individual Factors, User-Output Factors, Customer Satisfaction and Service features. Amongst these seven factors, Perceived Inconvenience and Service Quality are the major factors that strongly affect the overall satisfaction of online consumers, whereas the Feature availability and Individual factors are found to be reasonably affecting the overall adoption and satisfaction of customers using Internet banking services.

### **Key Words**

Internet Banking, Factor Analysis

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### **INTRODUCTION**

Globalization and deregulations have helped banks to expand their reach beyond countries and continents, to meet the international competitive feasibility.

The Indian banking and financial sector have also replaced some of traditional bank functions with the newly evolved services based on innovative ways. One of such services is online banking that aims to create more efficiency, effectiveness, and convenience for its banking customers. In the service sector, many commercial banks have adopted internet banking. The distribution of financial services through internet is the necessity of globalization and competition which is prevalent amongst various institutions belonging to the financial sector. Online banking is nothing but the delivery of banking services and products by using the internet portal through electronic communication channels directly by the customers (Pikkarainen, Karjaluoto, and Pahnla, 2004). Bank customers can perform many transactions on the banks' websites such as balance inquiries, money transfers to third parties, payroll deposits, cheque orders, and bill payments.

The service quality features that banks must offer to encourage consumers to switch to online banking should include usefulness, ease of use, reliability, security, and continuous improvement (Liao and Cheung, 2002). E-banking is considered beneficial to banks as well as its customers. From the banks' point of view, it has helped in lowering down the operational costs of banks by reducing the required physical facilities, needed staff, waiting times in branches (Sarel and Mamorstein, 2003). From the customers' perspective, e-banking allows customers to perform a wide range of banking transactions electronically via the bank's website anytime and anywhere (Grabner-Kraeuter and Faullant, 2008). Moreover, customers are no longer confined to the opening hours of the banks, travel and waiting times and easily available information regarding banking services (Hamlet, 2000).

Therefore, in today's customer-oriented service industry, it has become more important to know about customers' satisfaction about the service quality with respect to online banking services. This would help the banks to devise effective policies and strategies so that it can stand in a competitive market and also satisfy its customers by creating efficient customer services.

There exists wide number of studies on adoption of internet banking in developed countries by Sathye, 1999; Karjaluoto et al., 2002; Mattila, et al., 2003; Pikkarainen et al., 2004; Waite and Harrison, 2004; White and Nteli, 2004; Lassar et al., 2005; in advanced developing countries by Gerrard and Cunningham, 2003; Wang et al., 2003; Akinci et al., 2004 and in developing countries by Gurau, 2002; Rotchanakitumnuai and Speece, 2003; Eriksson et al., 2005; Wallsten. The researchers intend to ascertain that whether the adoption of internet banking has brought any change in the effectiveness and convenience of services provided by the banks to

its customers. In this context, the present research study is undertaken to investigate the factors that influence the adoption and level of satisfaction amongst the online customers.

## **LITERATURE REVIEW**

According to Pikkarainen, Karjaluoto, and Pahnla (2004) the use of the internet as a new substitute for the circulation of financial services has become a cut throat obligation instead of just a way to achieve competitive gain with the advent of globalization and fierce competition. Benamati and Serva (2007) have outlined security, trust and privacy concerns as extremely important ones from the consumer's viewpoint. Servon, and Kaestner (2008) emphasize on the fact, that online banking requires the consumers to maintain a regular interaction with computer and an internet connection to increase their comfort level with the technology. Perceived usefulness, security and privacy are the most influencing factors to accept online banking (Qureshi et al., 2008).

On the other hand the success of e-banking isn't without some troubles. Firstly the acceptance of e-banking has not kept tempo with that of internet practice (White and Nteli, 2004). This gap is accredited to the lack of belief among bank customers, particularly among internet users age 65 and older (Ilett, 2005; Perumal and Shanmugam, 2005). According to Asher, (1999), customers still prefer direct contact due to lack of faith in the internet. Recent literature on e-banking showed that the development of faith can help reduce the impact of key inhibiting factors such as fears about using the online service among non-e-banking customers (Vatanasombut et al., 2008).

## **OBJECTIVES OF THE STUDY**

To investigate the factors that influence the adoption and level of satisfaction amongst the online customers.

## **METHODOLOGY**

Present study is an empirical research to study the factor affecting the adoption of e-banking amongst bank customers. The study is based on the sample of 250 respondents from Hisar district of Haryana state who are using e-banking or are willing to use e-banking services of their banks. Convenient sampling method is adopted for collecting a sample. The questionnaire is designed with two sections : section 1 captures demographic information for the purpose of describing the sample

and it consists of questions pertaining to age, gender, marital status, educational qualification, employment status, monthly income, type of bank and type of account. Section 2 has questions relating to major factors that measure the consumer's opinion on adoption of e-banking. All the 29 questions of the questionnaire from section 2 used a Likert scale ranging from 1 = Highly Dissatisfied to 5 = Highly Satisfied. The data is analyzed using SPSS version 13.0. The study employs factor analysis to determine the factors that are considered important while ascertaining service quality in the Indian banks. Factor analysis is a set of technique of identifying latent or underlying factors from an array of seemingly important variables. It reduces the total number of variables into fewer factors and also shows the correlation between the factors (Nargundkar, 2005). Secondary data is collected through research papers, journals, websites, books, project reports etc.

The demographic characteristics of the respondents are summarized in Table 1. It is evident from the Table that the respondents have a relatively equal proportion of males (53.2 %) and females (46.6 %). The sample customers are mostly in the age group of 41-50 (32.4%) followed by more than 50 (26%). Further, a majority of the respondents (74.4%) were married. The respondents were predominantly post-graduate (50%) followed by any other category (40%) that includes the Ph.Ds implying that respondents have high literacy level. With regard to the employment status, service and professionals have 85% share implying that respondents are well placed in their career. The sample had a majority of respondents (62%) earning between Rs 40,000-55,000. The table also depicts that 56.8% of respondents have their accounts in private sector banks whereas 41.6% have their accounts in public sector banks. All the respondents maintain only saving account with their banks. On asking for how long they have been doing e-banking, majority respondents belong to the category 3-5 years followed by 0-2 years.

## **RESULTS AND DISCUSSION**

### **Factor Analysis**

A principal component factor analysis along with Varimax-rotation is performed on the 29 items that assessed the customers' acceptance of e-banking. The sample adequacy is measured by the Bartlett's Test of Sphericity (Chi-Square:5664.584, Significance: 0.000) presented in Table 2. The KMO value (0.792) indicates that data is fit for factor analysis. The 29 items have been reduced to seven factors with Eigen-values greater than 1.0, i.e. a factor must explain at least as much of the variance if not more, than a single original variable, which are retained for subsequent analysis.

**Table 1**  
**Demographic Profile of the Respondents**

Sr. No.	Demographic Profile	Frequency	Percent
Sex	Male	133	53.2
	Female	117	46.6
Age	Below 20	15	6.0
	21-30	30	12.0
	31-40	59	23.6
	41-50	81	32.4
	More than 50	65	26.0
Marital Status	Married	186	74.4
	Unmarried	64	25.6
Education Level	Diploma	12	4.8
	U.G	12	4.8
	P.G	125	50.0
	Any Other	101	40.4
Employment Status	Student	02	0.8
	Self employed/Business	11	4.4
	Professional	57	22.8
	Service	157	62.8
	Others	23	9.2
Monthly Income	Below 10,000	04	1.6
	10001-25000	05	2.0
	25001-40,000	32	12.8
	40,001-55000	155	62.0
	More than 55001	54	21.6
Type of Bank	Public sector	104	41.6
	Private sector	142	56.8
	Foreign bank	04	1.6
Type of Account	Saving A/C	250	100.0
E-Banking Patronage	0-2 years	75	30.0
	3-5 years	97	38.8
	6-8 years	63	25.2
	More than 9 years	15	6.0

**Table 2****KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.792
Bartlett's Test of Sphericity	Approx. Chi-Square	5664.584
	df	406
	Sig.	.000

Table 3 presents the overall reliability of this construct with Cronbach's coefficient alpha having the value of 0.927, which is highly significant while the reliability coefficients for seven factors ranged from 0.338 to 0.877 (Table 5) indicating a fair to good internal consistency among the items of each dimensions. The seven factors and the loadings are listed in Table 4.

**Table 3****Reliability Statistics**

Cronbach's Alpha	0.927
Cronbach's Alpha based on Standardized items	0.934
No. of Items	29

The result of Varimax-rotated matrix is presented in Table 4. Seven factors have been extracted which accounts for 72.973 per cent of variance. The percentages of variance explained by factor 1 to 7 are 38.609, 10.721, 5.485, 5.344, 4.884, 4.175 and 3.754 per cent respectively. The communalities shown in the table explains the amount of variance in the variable that is accounted by the factors taken together. Large communalities indicate that a large amount of variance in a variable has been extracted by the factor solution. A factor loading represents a correlation between an original variable and its factors. Factor loading is nothing but coefficient of correlation. The names of the factor statements and factor loadings have been summarized in Table 5.

The study examines the characteristics of the adoption of online banking of sample customers. The study shows that seven factors defined these characteristics that have been given appropriate names according to the variables that have been loaded on each factor. The seven factors are: Perceived Risk Factors, Service Quality, User-Input Factors, Individual Factors, User-Output Factors, Customer Satisfaction and Service features. Each of these factors is discussed below :

### **Factor-1 : Perceived Inconvenience**

The rotated matrix has revealed that respondents have perceived this factor to be most important factor with highest explained variance of 38.609 %. Nine out of twenty nine statements related to inconvenience, load on significantly, to this factor. This factor has been named as Perceived Inconvenience as it includes statements like switching from electronic banking to in-branch banking could be inconvenient to me, satisfied with time saving, like to use electronic banking because it offers independence, customer service in e-banking has consistent standard, in-branch banking involves too much queuing time, traveling to a bank involves too much queuing time, electronic banking charges are expensive, satisfied with convenience, have a regular access to computer. Hence, it can be concluded that long queuing time within branch as well as while traveling are the inconveniences that may make the respondents to feel that switching from e-banking to traditional branch banking can be inconvenient for them. Thus, the perceived inconvenience factor is the most crucial factor considered by respondents. This factor compares the inconveniences that they experience in branch banking as compare to internet banking.

### **Factor-2 : Service Quality**

The next important factor accounts for 10.721 % of the variance. Five statements load high on to this factor. This factor includes statements such as transactions through electronic banking are reliable, familiarity, regular access, faster than traditional banking. The factor has been named as Service Quality as the respondents will show their access to internet banking if they consider internet banking a better option over traditional banking due to better service qualities.

### **Factor-3 : User-Input Factors**

This is the next important factor which accounts for 5.485 % of the variance. Six features load high on to this factor. This factor has been named as User-Input factors as this includes the factors that are input by the banks while using internet banking. Such as, internet banking provides new methods to conduct transactions e.g. ATM, telephone banking and internet banking, availability of wide variety of services to conduct various operations, enjoyable to use, fully involved in transactions, bank branch involves travel costs and is user friendly. Hence it can be concluded that banks are introducing innovative features in their products which will make the transactions more user friendly and enjoyable. Gone are the days when whatever is produced used to be consumed. Today is the trend of KYC i.e. Know your customer, it has become imperative for the banking sector that they should

**Table 4**  
**Varimax-Rotated Matrix**

Statements	1	2	3	4	5	6	7
A9: Switching from electronic banking to in-branch banking could be inconvenient to me.	.849	.145	.051	.122	-.191	.053	-.060
A26: Satisfied with time saving	.715	.273	.191	.206	.221	.172	.237
A19: Customer service in e-banking has consistent standard.	.692	.275	.413	.025	-.066	-.004	-.098
A11: I like to use electronic banking because it offers independence.	.670	.206	.196	.015	-.178	.147	-.038
A6: Traveling to a bank involves too much queuing time.	.594	.121	.593	-.064	-.035	.169	.144
A7: In-branch banking involves too much queuing time.	.574	.135	.317	.055	.003	.514	-.082
A27: Satisfied with convenience	.496	.391	.219	-.071	-.379	.248	-.311
A2: Transactions through electronic banking are reliable	.099	.776	.152	.054	-.147	.349	.006
A3: I am familiar with e-banking	.121	.757	.158	.150	-.017	.128	.160
A4: I am comfortable with e-banking	.301	.679	.335	.179	.148	.063	-.002
A22: I have regular access to the internet.	.358	.671	.236	-.212	.015	-.105	-.209
A5: Electronic banking services are faster than in-branch banking	.247	.519	.448	.162	.472	.035	.032
A15: I like to use new methods to conduct transactions e.g. ATM, telephone banking and internet banking.	.242	.371	.745	-.041	.046	-.030	-.244
A20: Electronic banking has a wide variety of services available.	.286	.098	.722	.152	.034	.208	-.122
A13: E-banking is enjoyable to use	.265	.294	.706	.158	-.072	.184	.065
A12: Electronic banking enables me to be fully involved in my transactions.	.261	.470	.577	.183	.031	.051	.051

Contd. Table 4

A10: Going to a bank branch involves travel costs.	-.220	.117	.541	.383	.019	.297	.141
A14: E-banking is user friendly	.362	.262	.493	.386	.229	.240	.121
A24: I use e-banking because my friends use it.	.046	.145	.252	.881	-.032	-.109	-.002
A25: The use of e-banking reflects my social status.	.121	.009	.039	.850	.207	.158	-.007
A16: Electronic banking charges are expensive	.241	.055	.094	.042	-.825	.213	-.030
A17: Electronic banking is time saving	-.145	-.025	.223	.222	.663	.301	.093
A8: Electronic banking services are faster than in-branch banking.	.417	.297	-.037	.237	.511	.414	-.089
A28: Satisfied with the consistency standards	.187	.466	.353	.187	.148	.597	-.073
A18: Electronic banking is convenient.	.503	.101	.286	-.139	-.091	.531	-.077
A29: Satisfied with the wide variety of services available	.402	.408	.146	.129	-.031	.443	-.094
A1: Transactions through electronic banking are accurate.	.007	.077	.011	.039	.132	-.126	.821
A21: I have a regular access to a computer.	.429	.389	.300	.023	.118	-.055	-.539
A23: E-banking is easy to use.	.318	.422	.177	-.155	-.330	.235	.437
A9: Switching from electronic banking to in-branch banking could be inconvenient to me.	.849	.145	.051	.122	-.191	.053	-.060
<b>Total</b>	<b>11.197</b>	<b>3.109</b>	<b>1.591</b>	<b>1.550</b>	<b>1.416</b>	<b>1.211</b>	<b>1.089</b>
<b>% of variance</b>	<b>38.609</b>	<b>10.721</b>	<b>5.485</b>	<b>5.344</b>	<b>4.884</b>	<b>4.175</b>	<b>3.754</b>
<b>Cumulative %</b>	<b>38.609</b>	<b>49.330</b>	<b>54.816</b>	<b>60.160</b>	<b>65.044</b>	<b>69.219</b>	<b>72.973</b>

**Table 5**  
**Naming of Factors**

<b>Factor Name</b>	<b>Factor Statement</b>	<b>Factor Loading</b>	<b>Cronbach Alpha Value</b>
Perceived Risk Factors	A 9 Switching from electronic banking to in-branch banking could be inconvenient to me.	0.863	0.877
	A 26 Satisfied with time saving	0.743	
	A 11 I like to use electronic banking because it offers independence.	0.705	
	A 19 Customer service in e-banking has consistent standard.	0.670	
	A 7 In-branch banking involves too much queuing time.	0.626	
	A 6 Traveling to a bank involves too much queuing time.	0.611	
	A 16 Electronic banking charges are expensive	0.401	
	A 27 Satisfied with convenience	0.523	
	A 21 I have a regular access to a computer.	0.633	
	A 2 Transactions through electronic banking are reliable	0.777	0.839
	A 3 I am familiar with e-banking	0.609	
Service Quality	A 4 I am comfortable with e-banking	0.610	
	A 22 I have regular access to the Internet	0.671	
	A 5 Electronic banking services are faster than in-branch banking	0.667	
	A 15 I like to use new methods to conduct transactions e.g. ATM, telephone banking and internet banking.	0.834	0.862
	A 20 Electronic banking has a wide variety of services available.	0.535	
User Input Factors			

Contd. Table 5

	A 13 E-banking is enjoyable to use	0.579	
	A 12 Electronic banking enables me to be fully involved in my transactions.	0.655	
	A 10 Going to a bank branch involves travel costs.	0.464	
	A 14 E-banking is user friendly	0.411	
Individual	A 24 I use e-banking because my friends use it.	0.867	0.367
Factors	A 26 The use of e-banking reflects my social status.	0.818	
User	A 17 Electronic banking is time saving	0.738	0.520
Output	A 8 Electronic banking services are faster than in-branch banking.	0.633	
Factors			
Customer	A 28 Satisfied with the consistency standards	0.653	0.769
Satisfaction	A 29 Satisfied with the wide variety of services available	0.561	
	A 18 Electronic banking is convenient.	0.543	
Service	A 1 Transactions through electronic banking are accurate.	0.827	0.338
Features	A 23 E-banking is easy to use.	0.509	

know the demands and requirements of their customers. Along with basic services, a customer needs wide variety of services such as ATM, telephone banking, credit/debit card, mobile banking, internet banking etc. Moreover, the process of internet banking should be more user friendly.

**Factor-4 : Individual Factors**

Two types of features load on to this factor and they together account for 5.344% of variance. This factor includes that internet banking is opted for the reason that their friends use it and it reflects their social status. However, these features vary from individual to individual as some respondents may agree with these statements some may not, hence it is named as Individual Factors.

**Factor-5 : User-Output Factors**

Two types of features load on to this factor and together accounts for 4.884% of variance. This factor includes the two important statements about internet banking in the form of time saving and faster than in-branch banking. The researcher has considered these two factors as the expected output by the respondents while using e- banking services and thus named it User-Output Factors. Hence, it can be observed that respondents have shown their inclination towards these statements as they may have something in their mind with respect to features like whether internet banking is time saving and faster than in-branch banking or not.

**Factor-6 : Customer Satisfaction**

This is a very significant factor, which accounts for 4.175% of variance. Three features have been loaded on to this factor. This factor considers satisfaction among respondents with respect to consistent standards of banks, availability of wide variety of services and convenience. Hence, this factor has been named as Customer Satisfaction because these features contribute to their satisfaction while using the internet banking. Satisfaction is intangible as it can only be felt. In a high competitive scenario, satisfaction of customers is of utmost importance for any organization.

**Factor-7 : Service Features**

The last factor, accounts for 3.754 % of variance with a load of two statements. The two features included in this factor are transactions through electronic banking are accurate and e-banking is easy to use. Hence it is named as Service Features. The customers of bank should not feel it as burden to perform their transactions through internet banking. The banks should design internet banking

programme in such a way that it is easily understood and implemented by its customers. Above all the transactions should be accurate as it is the matter of hard earned money of the customers. Banks should have some high security measures to ensure accuracy of transactions.

## **FINDINGS**

1. It is being observed that the sample respondents may feel inconvenient on switching from e-banking to traditional branch banking for the reason of long queuing time while traveling to bank and also within the branch. The sample respondents also have something in their mind relating to inconvenience of extra charges that they have to pay and also relating to consistent standard and regular access to a computer. Moreover, this factor has been considered as the most significant factor as nine out of twenty nine statements related to inconveniences are loaded on significantly to this factor. Further, it has highest explained variance of 38.609%. Thus, perceived inconveniences factor is the most important crucial factor considered by the sample respondents. This factor represents the inconvenience while using internet banking by the respondents.
2. The respondents have shown their acceptance to internet banking for better service qualities provided by the banks. It may be considered that the respondents feel internet banking better as they may emphasize on reliability, regular access and faster service as an improvement over traditional banking.
3. In the highly competitive scenario for banking sector, it will not be an exaggeration to say that customer is the king for the banks. Banks have to keep an eye on their complete banks relating to launch of new services and facilities for their customers. The competition among banks indeed is very helpful for the customers as they get the best available in the market. Therefore, the feature of User-Input factor relating to availability of wide variety of services such as ATM, telephone banking, credit/debit card and internet banking is of significance to customers. Moreover, it should be ensured that the process involved in performing transactions should be more user friendly.
4. It is also observed from the study that respondents may use the internet service because their friends are using it or it is treated as status symbol. However, these are important statements with regard to individual behavior and the impact may vary from individual to individual.

5. Respondents have shown their inclination towards the statements such as time saving and faster than in-branch banking. Today, everybody is short of time and cannot afford to visit branches for conducting their routine transactions every time. In Metros and big cities it will take half of the day, if not full day to visit banks for performing the necessary transaction. On the other side, e-banking can be performed anywhere and anytime. Thus the User-Output factor is of great significance in today's' lifestyle.
6. Customer satisfaction with respect to consistent standards of banks, availability of wide variety of services and convenience is of utmost importance nowadays as satisfied customer is an asset for the organization.
7. Service features also play a significant role in helping banks to adopt internet banking. The services should be designed according to the need and demand of customers. The ease to use internet banking and accuracy in transaction is considered significant services provided by banks. The banks need to do more to make these services more attractive and effective.

## CONCLUSION

The present research study reveals that the adoption of internet banking is marked by the factors such as perceived inconvenience, service quality, user-input factor, individual factor, user-output factor, customer satisfaction and service features. Perceived inconvenience and service quality are being considered as the major factors that strongly affect the overall satisfaction of online consumers. Alternatively, service features and individual factors are considered to be reasonably affecting the overall contentment of customers using internet banking services. To promote customers' satisfaction, it is unavoidable for banks to give due weightage to all the above-mentioned factors. The banks should adopt an innovative approach to inform the consumers about pros and cons of internet banking. Banks need to persuade their customers that online banking is safe, reliable, fast, secure and easy to operate. This will inculcate confidence in the customers, and ultimately affect the adoption of internet banking.

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## **A Study of Customers' Perception Regarding Improvement in LIC's Performance in Post-Reform Period**

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### **Abstract**

The wave of globalization has affected the entire world and has brought about substantial changes in the world's economy. The insurance sector, too, has been affected by these changes, and there have been significant changes in it. Since the insurance industry has been opened to the private players, the competition has increased many folds. So, LIC is facing challenges from these new competitors entering the market. The present study analyses the improvement in the performance of LIC in the post-reform period using a structured questionnaire administered on a sample of 200 respondents from Punjab. The findings indicate that there is a significant improvement in the performance of LIC in the post-reform period.

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### **INTRODUCTION**

The Life Insurance Corporation i.e. LIC was created by the Government of India by merging over 240 private life insurance companies and provident fund societies. The nationalization was justified on the grounds that the state would be in a better position to manage the resources generated by the insurance companies and use them for nation building purposes, making insurance reach the rural population and improving the standards of life insurance sector on a whole.

Soon, LIC became a household name. It succeeded in penetrating rural areas. The vast network of LIC offices and over 10 lakh agents helped customers

to easily access its services. In addition to providing insurance, LIC was at the forefront for providing loans for financing housing schemes, loans to panchayats and municipal bodies for undertaking water supply and sanitation schemes, financing infrastructure projects etc.

Till the fiscal year 1999-2000, LIC was the only life insurance provider. It was found that there was a wide gap in terms of market potential and its exploitation by LIC. It suffered from overstaffing, poor customer service and lack of a good range of products. So, a need for reform in the life insurance sector was felt and in the year 2000-01, the Indian market was opened to private sector investment. The process of reforms were started on the basis of recommendation of R.N. Malhotra Committee, which was set up in 1993 with an objective of creating a more efficient and competitive financial system suitable for the Indian economy. The Committee strongly felt that in order to improve the customer services and increase the spread of the insurance, this sector should be opened up to competition. The reforms in insurance sector resulted in to liberalization, privatization and globalization of insurance industry in India. The above research indicates that though large number of studies have been conducted on insurance sector but no worthwhile research have been conducted to see the effect of reforms on the Improvement in LIC's Performance in Post -Reform Period.

### **OBJECTIVE OF THE STUDY**

The objective of the study is to make a comparative analysis of service quality of life insurance industry in the pre -and post- reform period of LIC. Accordingly the following hypothesis is proposed :

**Hypothesis :** There has been a significant improvement in the performance of LIC in the post- reform period.

### **RESEARCH METHODOLOGY**

A structured questionnaire was designed to access the customers' perception regarding improvement in the performance of LIC in the post reform period. The respondents chosen for the survey included whole of Punjab covering Majha, Doaba and Malwa regions. Data was collected from 200 respondents who were customers of LIC. The seventh and the last part of the questionnaire analyzed the effect of privatisation on LIC. It consisted of eleven questions which measured the improvement in the working of LIC in the post reform period. The respondents were asked to respond on a 5-point Likert scale ranging from "highly improved" to "badly deteriorated".

## **REVIEW OF LITERATURE**

Gunjkar et al. (1988) in their study surveyed a sample of 1124 people of Chora village of Goa to determine how many of them were covered under life insurance. It was found that out of the total population of 6000 people, 414 persons were uninsured, 710 persons were identified to have potential for having insurance, 296 were already insured and only 2 out of these 296 had some problems in getting services from LIC. Thirty two per cent people were approached by LIC agents out of whom thirty one percent expressed their willingness to get insured. Forty per cent people wanted to know more about insurance while 44 per cent were already aware of its benefits. By using the information collected, the survey team suggested various strategies to identify people to be covered under life insurance.

Reddy and Murthy (1996) in their study analyzed the customer services provided by LIC at the branch level. It was found that majority of policy holders were satisfied with services of LIC. It was suggested that LIC must design good publicity campaign, it must collect all the required documents from the policy holders at the time of registration of their policies, open additional enquiry and cash counters and pay cash instead of cross cheques to policy holders.

Arora (1992) in his thesis analyzed the marketing strategies of life insurance services of LIC in Jalandhar division. The study found that most of the agents found LIC to be a good employment opportunity and gave them a steady income. Also most of the agents were satisfied with the premium charged by LIC and the bonus declared by it time to time. However they were dissatisfied by the mode of functioning of LIC. The study also observed that although there was a complexity in the range of products and pricing system in LIC, still it was preferred.

Kalra and Garg (1999) observed that successful marketing of life insurance policies was dependent on a combination of good communication and promotional strategies of the insurance companies. They found that the major problems associated with marketing of LIC policies in rural areas included illiteracy, lack of awareness, and negative attitude towards saving and low purchasing power. It was suggested that LIC should design future strategies so that the customers are able to overcome all the anxieties they have regarding life insurance.

Gahlot (2000) in his study shared his view regarding the huge potential and further penetration of life insurance industry in India and discuss its suitability at the micro level. He compared the total income and expenditure of LIC for the year 1997-1998 and found that expenditure was less than 12 per cent of its total income. He also observed that about 85 per cent of the policy holders claimed their maturity amount after 25 to 30 years and only 15 per cent claimed their money due to the

death of policy holders.

Saibaba et al. (2002) performed a study to access the attitude of women towards life insurance. The study was conducted on LIC in Warangal division of Andhra Pradesh. An interview was conducted on 69 persons .70 per cent of them were found to be satisfied with the services provided by LIC and 30 per cent were dissatisfied. The reasons for their dissatisfaction included difficulty in depositing the premium, lack of awareness regarding new policies and lack of proper advertisement.

Pathak and Singh (2003) examined the effect of entry of private players into the insurance sector. A study was conducted of the various marketing strategies adopted by LIC, its strengths and weaknesses. It was concluded that although the insurance companies were spending a lot of money on advertisement but not enough money was being allocated for research and development of new products. It was also suggested that agent's pre-recruitment training must be ensured to provide efficient and effective customer services.

Banumathy and Manicham (2004) conducted a study to examine the customer services provided by LIC at three stages; before the issue of policy, during the operational period of the policy; and at the time of settlement of claims. The study found that LIC agents provided efficient customer services before the issue of policy and also play a major role in influencing the policy holders. The study concluded that LIC can improve its performance by trying to increase bonus rates, introducing new products at regular intervals and guiding the illiterate and rural folks.

Banumathy and Subasini (2004) conducted a study to determine the attitude of LIC policy holders towards life insurance business in Virudhunagar district. To know the overall attitude of the respondents, a list of 10 components was selected which included premium rate, branch location, loan procedure, revival of policy, surrender procedure, bonus rate, services provided by agents, settlement of claims, advertisement and publicity, and safety and social security. They also tried to determine whether age and educational qualifications influenced the customers' decision for buying LIC policies.

Dhanda (2004) studied the divisional performance of LIC business in northern India during 1990-2000 on the basis of segmentation of policy holders, mobilization of savings of people, operational efficiency and claim settlement. The study found that the ratio between first insurance business and new business was more than 60 per cent in the northern zone. A majority of respondents preferred the introduction of computers to increase the efficiency level and improve the service quality.

Raman and Gayathri (2004) undertook a study to determine how aware the respondents were about the new insurance companies and to check whether they

would like to invest in these companies. They found that most of the respondents came to know about the new companies through their friends and wished to buy their policies. They preferred the new companies because of attractive schemes, reasonable premium and high risk coverage. On the other hand LIC policies were preferred only because of their risk coverage, services and familiarity. The study concluded that existing as well as new companies must try to rope and retain their customers to survive the market.

Devasenapathi et.al. (2007) analyzed and rated all the 13 life insurance companies in the Indian market to assess the consumer response rate for privatization and awareness towards the various life insurance products from 500 consumers belonging to Chennai. The results showed that the total average premium was Rs. 5,550; the average premium of LIC was Rs. 5,249 while that of the private companies was Rs. 9,952. It was found that 12.2% of the consumers bought a policy as an investment to get return, 8.2 % as a risk cover of death and only 5.6% bought it as a risk cover of death.

Jampala and Rao (2007) conducted a study on the distribution channels of LIC. The study found that although a number of intermediaries or distribution channels like corporate agents, brokers and referrals have emerged over time, LIC was not able to capitalize on them and hence could not make good business from these channels.

Vanniarajan and Jeyakumaran (2007) attempted to identify the various quality factors among the insurers and their impact on the overall attitude towards insurers in the public and private players in the life insurance market. They identified a total of 50 dimensions of service quality and rated them on a five point scale. The SERVPERF score of the service quality factor was calculated for both the consumers of public and private players. Seven statements were drawn from the review to measure the overall attitude towards insurers. The perception on the overall attitude on the insurer was summated with the help of an index called the Overall Attitude Index.

Vanniarajan and Jeyakumaran (2007) analyzed the change in the service sector brought about by the globalization and liberalization. The study suggested that the success of the companies in the market rest on the availability of customized product and also the service quality offered to customers. The future growth of the companies depends upon its service and service quality to the customers. So the insurance companies should evaluate their services and identify their distinction from others.

Khurana (2008) in his study attempted to analyze the customer preferences in the life insurance industry based on the plans, purpose of buying the policies by the customers, their satisfaction levels and their future plans to buy new policies.

The study showed that only 12 respondents (6.3 per cent) faced some problems and all of these had policies of LIC. The satisfaction level of the customers of HDFC Standard Life, ICICI Prudential, Kotak Life, Max New York and Birla Sun Life was 100 per cent while that for LIC, Tata AIG and Bajaj Allianz were 45 per cent, 50 per cent and 50 per cent respectively. Also, only 56.3 per cent of the customers intended to buy new plans from the same company.

## FINDINGS AND ANALYSIS

To analyze the performance of LIC in the post-reform period, the performance factors have been broadly classified into three categories - factors related to infrastructure and services offered to the customers, factors related to products and policies offered by LIC and factors related to claim settlement procedures.

**Table 1**  
**Customers' Perception Regarding Improvement in LIC's Performance Regarding Infrastructure and Services Offered to Customers**

Statement	Frequency & Per cent				
	Highly Improved	Improved	Remained Same	Deteriorated	Badly Deteriorated
Improvement in the overall working of your company	28 (14.0%)	114 (57.0%)	50 (25.0%)	5 (2.5%)	3 (1.5%)
Improvement in the behaviour and efficiency of employees/agents	23 (11.5%)	90 (45.0%)	74 (37.0%)	13 (6.5%)	0 (0.0%)
Improvement in the overall ambience and infrastructure	31 (15.5%)	91 (45.5%)	65 (32.5%)	10 (5.0%)	3 (1.5%)
Level of information being provided by the employees/agents to the customers	43 (21.5%)	74 (37.0%)	66 (33.0%)	11 (5.5%)	6 (3.0%)
Effectiveness of the various promotional activities in arriving at the final decision	32 (16.0%)	78 (39.0%)	70 (35.0%)	16 (8.0%)	4 (2.0%)

Table 1 shows the frequencies and percentages of customer's perception regarding the improvement in performance of LIC regarding infrastructure and services offered to the customers in the post-reform period. 28 (14.0%) rate the overall quality to be highly improved, 114 (57.0%) rate it as improved, 50 (25.0%) find that the quality remained same, only 5 (2.5%) feel it deteriorated and merely 3 (1.5%) feel it badly deteriorated. 23 (11.5%) rated the improvement in the behaviour and efficiency of employees/ agents to have highly improved, 90 (45.0%) rate it as improved, 74 (37.0%) feel it remained same, while 13 (6.5%) feel it deteriorated and no one found it badly deteriorated. 31 (15.5%) rate the improvement in the overall ambience and infrastructure to be highly improved, 91 (45.5%) rate it as improved, 65 (32.5%) find that the quality remained same, 10 (5.0%) feel it deteriorated and 3 (1.5%) feel it badly deteriorated. 43 (21.5%), 74 (37.5%), 66 (33.0%), 11 (5.5%) and 6 (3.0%) rate the improvement in the level of information being provided by the employees/agents to the customers to have highly improved, improved, remained same, deteriorated and highly deteriorated respectively. Similarly, 32 (16.0%), 78 (36.0%), 70 (35.0%), 16 (8.0%) and 4 (2.0%) rate the improvement in the effectiveness of the various promotional activities in arriving at the final decision to have highly improved, improved, remained same, deteriorated and highly deteriorated respectively.

**Table 2**

**Customers' Perception Regarding Improvement in LIC's Performance Regarding Products and Policies**

Statement	Frequency & Per cent				
	Highly Improved	Improved	Remained Same	Deteriorated	Badly Deteriorated
Improvement in product quality offered by your company	22 (11.0%)	115 (57.5%)	54 (27.0%)	6 (3.0%)	3 (1.5%)
Pricing of policies	21 (10.5%)	113 (56.5%)	45 (22.5%)	18 (9.0%)	3 (1.5%)
Formalities required to get a life insurance policy	38 (19.0%)	87 (43.5%)	48 (24.0%)	25 (12.5%)	2 (1.0%)
Flexibility and need based suitability of the products offered	38 (19.0%)	98 (49.0%)	51 (25.5%)	7 (3.5%)	6 (3.0%)

Table 2 shows the frequencies and percentages of customers' perception regarding the improvement in performance of LIC regarding products and policies offered by LIC to the customers in the post reform period. 22 (11.0%) rate the Improvement in product quality offered by your company to be highly improved, 115 (57.5%) rate it as improved, 54 (27.0%) find that the quality remained same, only 6 (3.0%) feel it deteriorated and merely 3 (1.5%) feel it badly deteriorated. 21 (10.5%) rated the improvement in the pricing of policies to have highly improved, 113 (56.5%) rate it as improved, 45 (22.5%) feel it remained same, while 18 (9.0%) feel it deteriorated and 3 (1.5%) found it badly deteriorated. 38 (19.0%) rate the improvement in the Formalities required to get a life insurance policy to have highly improved, 87 (43.5%) rate it as improved, 48 (24.0%) find that the quality remained same, 25 (12.5%) feel it deteriorated and 2 (1.0%) feel it badly deteriorated. Similarly, 38 (19.0%), 98 (49.0%), 51 (25.5%), 7 (3.5%) and 6 (3.0%) rate the improvement in the Flexibility and need based suitability of the products offered to have highly improved, improved, remained same, deteriorated and highly deteriorated respectively.

**Table 3**

**Customers' Perception Regarding Improvement in LIC's Performance Regarding Claim Settlement**

Statement	Frequency & Per cent				
	Highly Improved	Improved	Remained Same	Deteriorated	Badly Deteriorated
Change in time taken to settle a claim	23 (11.5%)	90 (45.0%)	68 (34.0%)	13 (6.5%)	6 (3.0%)
Formalities required to settle a claim	26 (13.0%)	91 (45.5%)	47 (23.5%)	11 (5.5%)	6 (3.0%)

The Table 3 analyses the customers' perception regarding improvement in LIC's performance regarding claim settlement. 23 (11.5%) customers rate the change in time taken to settle a claim as highly improved, 90 (45.0%) feel it has improved, 68 (34.0%) feel there is no change, 13 (6.5%) feel it has deteriorated, and 6 (3.0%) feel it has badly deteriorated. Similarly, 26 (13.0%) customers rate of improvement in amount formalities required to settle a claim as highly improved, 91 (45.5%) feel it has improved, 47 (23.5%) feel there is no change, 11 (5.5%) feel it has deteriorated, and 6 (3.0%) feel it has badly deteriorated.

## CONCLUSIONS AND SUGGESTIONS

The study examined the customers' perception regarding the improvement in LIC's performance in the post reform period. The study found that LIC has shown a huge improvement regarding infrastructure and services offered to the customers, regarding products and policies offered by it and regarding claim settlement process. So, the hypothesis that LIC has shown a significant improvement in its performance in the post reform period holds true. However, there is a significant no. of customers who still feel that the performance of LIC has either remained same or has deteriorated in the post reform period regarding some of these factors. These include improvement in the behaviour and efficiency of employees/agents, increase in the effectiveness of the various promotional activities to aid the customers in arriving at the final decision, formalities required to get a life insurance policy and time taken to settle a claim. This suggests that LIC must strive to further improve its performance by employing agents/employees who are efficient and trained in such a way that their behaviour towards the customers is friendly and courteous. It must also organize promotional and awareness programs to guide the customers regarding the products of the company. It must try to reduce the formalities required to buy a policy and also improve their claim settlement process.

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## Knowledge as Tool For Economic Growth

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Professor A.C. Pigou, the Founder of Welfare School of Economics, opens his magnum opus **Economics of Welfare** with the following words :

*When a man sets out upon any course of inquiry, the object of his search may be either light or fruit - either knowledge for its own sake or knowledge for the sake of good things to which it leads. In various fields of study these two ideals play parts of varying importance. In the appeal made to our interest by nearly all the great modern sciences some stress is laid both upon the light-bearing and upon the fruit-bearing quality, but the proportions of the blend are different in different sciences.*

The study of economic history shows that the second half of nineteenth century witnessed the most spectacular economic growth with two clearly noticeable features: one, growth was confined to only some parts of the world; and two, development and use of technical knowledge was its main causative factor. The lead in this respect was taken by those countries which adopted technical and vocational education as an integral part of their educational systems. The United States of America was far ahead in this respect, followed by the European countries, and Great Britain far behind. There were two main reasons for underdeveloped and developing countries for not following this course. One, the ruling powers were not interested in promoting economic development of their colonies; they wanted the colonies' education systems only to connect them to the local inhabitants. And two, since historically the education system everywhere was evolved to promote values and ethical concerns, the natives too did not have much enthusiasm for change. It is well known that in Great Britain and Europe

organized education was established by the Church to profess the gospel and promote Christian ethics. Those who were assigned this task came, therefore, to be known as *professors*.

Wassily Leontief, an early recipient of Nobel Prize in Economic Sciences, mentions three factors that dominated the overall development of the world economy: population trends, technological change, and the availability of natural resources<sup>2</sup>. W.W. Rostow's pioneering study *The World Economy* underlining the importance of population as the main driving force for development provides world estimates of population since mid-eighteenth century which are as follows :

**Medium Estimates of the World Population since 1750 (in millions)**

1750	1800	1850	1900	1950	2000
791	978	1262	1650	2515	6131

**Rates for every 50-year Increase**

1750-1800	23.64%
1800-1850	29.04%
1850-1900	30.75%
1900-1950	52.42%
1950-2000	143.74%

The secular trend in the growth of population is unmistakably visible both in the medium estimates and 50-year increase in the rate.

As population grew, education became increasingly concerned with technical and vocational aspect to find avenues for fruitful employment and gradually broke loose from its value moorings. The shift was not sudden but by now it is visible everywhere. Although the root cause of diversification of education was initially pressure of population, a closely related phenomenon was development of technology to exploit natural resources. Most of the developing and underdeveloped countries that have reoriented their education systems to incorporate technical education as a significant input for economic development were the erstwhile colonies which gained freedom after the Second World War (1939-46). Leaving aside China for which no authentic data are available from secondary sources, India may be described as the first newly freed major country to turn its gaze in this direction.

Transitions are always painful. Lest India and other similarly placed countries go astray, a well-intentioned advice came from Mrs. Margaret Thatcher, an ex-Prime Minister of Britain. In a lecture organized by the Citybank in 1994 at Bombay as part of its Asian Leadership series this is what she said :

*While there are certain principles that are universal... each country has its own traditions and beliefs, its own history and characteristics, all of which have to be taken into account, especially when making systemic changes.*

Introducing technical (including vocational) education requires some safeguards such as manpower forecast which is not easy to construct as it needs statistics which are hardly available in any developing country. Soon after India introduced new education policy based on Kothari Commission Report (1986) Rajiv Gandhi, India's former Prime Minister, enlarging upon this requirement made it a part of his Convocation Address at Indira Gandhi National Open University (IGNOU). Here are his words :

*We must first build a picture of what we want India to be, like 15 to 20 years from now. What will industry be like, what will agriculture be like, what will services be like, what will all other departments in the country be like? From that we must work back and build an education system which will serve those needs.*

Stress on manpower forecast as a prerequisite to introducing technical education in the system is also implied in an observation made earlier by the International Commission on the Development of Education set up by UNESCO in 1971. This observation is based on one of its three major findings and reads as follows :

*... for the first time in history, education is now engaged in preparing men for a type of society which does not yet exist.*

The findings are preceded by a statement that in budgetary terms, education 'ranks a close second in world expenditure of public funds, coming just after military budgets.'

Next to manpower forecast is search for appropriate technology. Much of technology that developing countries use came from industrial economies which had enough capital but were short of manpower. Capital-intensive technology, rather than promoting employment, can further reduce absorption of labour. Besides, much of it being cost-intensive may not be within the easy reach

of developing countries given their resources.

Since no two countries are similarly placed in terms of their socio-economic characteristics, political systems and factor endowment, there cannot be identical policy prescriptions for their reform. To overcome this difficulty the policy makers often make use of case studies. India being the developing world's second largest economy after China provides some interesting lessons. The country became free from the colonial rule in 1947; it experimented with the mixed economy pattern until 1991; and finally began opening up its economy by slow degrees to be bogged down with insurmountable difficulties in less than twenty years. The main difficulty came from the country's failure to raise the level of employment. The rate of growth of employment in the country which was 2.7 per cent per annum during 1983-1994 dropped off to 1.07 per cent per annum during 1994-2000.

Technical education is a mixed blessing for developing countries. Whereas it promotes gainful employment, its overall impact on the level of employment in the economy as a whole may be positive or negative. For the period 1997-2002, the Planning Commission, Government of India, indicates significant pick-up in the rate of growth of employment - to 2.44 per cent per annum. Although the emphasis in the country's education system is no more on the non-technical aspect, the system has neither a manpower forecast nor the occupational data from which it can be constructed. When the All India Council for Technical Education was set up in 1987, making 'forecast of the needed growth and development in technical education' was made one of its primary functions. The Council's many other responsibilities included preventing 'commercialization of technical education'. Sadly, both these functions have been neglected making the entire system move rudderless. A typical instance of ignorance about some aspects of education even among those who have a sensitive awareness of its overall position is the recognition accorded to Kerala as a model State in the field of education not knowing that Kerala is among the three States of the Indian Union - the other two being Punjab and Bihar - which carry the largest imbalance between growth of labour force and that of employment. This will be clear from the following statistics taken out of a more comprehensive table included in the country's Ninth Five Year Plan [1997-2002] giving contrasting data about growth of employment and that of labour force in respect of 15 major States of the country.

**Growth of Employment and Labour Force**

Per cent per annum			
Estimated			
State	Growth of Employment 1997-2002	Growth of Labour Force	
		1997-2002	2002-2007
All India	2.44	2.51	2.47
Andhra Pradesh	3.11	2.39	2.34
Assam	3.73	2.73	2.79
Bihar	1.29	2.58	2.85
Gujarat	2.53	2.37	2.18
Haryana	3.49	2.99	2.84
Karnataka	2.81	2.47	2.26
Kerala	1.26	2.30	1.90
Madhya Pradesh	2.61	2.39	2.48
Maharashtra	2.54	2.26	2.20
Orissa	2.35	2.10	2.13
Punjab	0.73	2.27	2.08
Rajasthan	2.71	2.84	2.91
Tamil Nadu	2.00	1.98	1.70
Uttar Pradesh	2.07	2.57	2.68
West Bengal	2.75	2.52	2.45

Estimates are on usual status basis

The imbalance between growth of labour force and employment implies not only the cost in terms of human factor - the number of persons unemployed - but also the cost of resources utilized in creating the infrastructure and other facilities to train these persons. The country's Tenth Five Year Plan (2002-2007) does not carry any specific assessment of the impact of technical education on development, particularly on the level of employment, but describe the functioning of its education system as the most disappointing aspect of its development strategy. The waste in the country's unplanned technical education can be imagined by the fact that while in industrial countries, on an average, only 1.4 technicians are employed for 1 engineer, in India this ratio goes up to anywhere from 1 engineer to 3-6 technicians.

Education, along with resources which include a country's size and composition of population, has come to be universally regarded as the main determinant of economic growth. India's initial indifference to evolve a suitable population policy as its government decided to adopt planning as the main method of development was due, according to Gunnar Myrdal, another early recipient of Nobel Prize, to the inhibiting influence of the "father of the nation", Mahatma Gandhi, who ruled out all methods of birth control other than continence (brahmascharya).

Although, historically, technical knowledge has emerged as a major input for development, non-technical education is of no less importance for overall progress of mankind. There is an old proverb, 'Man does not live by bread alone'. At a time when developing societies are being increasingly overwhelmed by materialism and individualism, there is an urgent need to 're-conceive the process of education, not merely as an instrumentality of providing proficiency for a job, but as an activity that nurtures a continuous growth of the mind and the spirit, and respects the ethics and morals necessary for ordering and illumination of life.'

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## **The Impact of HR Oriented Personnel Policies on Prevalence of Employeeship Culture in Indian Organizations**

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### **Abstract**

The present empirical research attempts to study the HR orientation of personnel policies and investigate their impact on prevalence of employeeship culture in the Indian organizations. The HR orientation of personnel policies have been examined on the aspects like: importance given to employees and their development; dependence of the organizational productivity on its employee; determination of relationship between organization and employees; quality of the product; freedom to employees; democratic culture and focus on strengthening interpersonal relations; and creating informal and conducive environment for all in the organization. For the purpose of the study, responses from three hundred respondents belonging to twelve organizations of five diverse sectors were recorded and the obtained results reveal that HR orientation is a significant aspect of the personnel policies and it plays an imperative and vital role in establishing the prevalence of employeeship culture to achieve progressive organizational performance.

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### **INTRODUCTION**

Human Resource is critical for growth and success of any organization in today's competitive scenario. And, thus, the orientation of the policies of the organization in general and the personnel policies in specific are required to be concentrated on its human resource in order to achieve sustainable competitive advantage in the existing dynamic environment. For the accomplishment of their objectives pertaining to productivity, relationship and quality, the organizations

should design personnel policies that are HR oriented and can create an bolstering culture of teamwork and mutual respect towards each other and between employer and employees, they feel comfortable and attached; where people have freedom to act and practice their progressive ideas for the benefit of the organizations; where the organizations gets transformed into learning and innovative establishments and focus on development of its people and people in turn develops a sense of belongingness and ownership and put a wholehearted effort to enhance the organizational performance.

Considering and valuing the criticality and importance of this aspect, the present study has been conducted primarily to appraise the importance of human resources and people orientation of the personnel policies and to investigate the impact of these policies in creation, prevalence and maintenance of employeeship culture in an organization, for attaining professional and corporate excellence.

## **REVIEW OF LITERATURE**

Becker and Gerhart (1996) explored and described the crucial and unique influence of human resource management decisions on organizational performance and attempted to establish a link between HRM and organizational performance. Burton (2003) explored and investigated the interrelationships of organizational culture, managerial values, and organizational citizenship behaviors and measured dimensions of organizational citizenship behavior including interpersonal relationships, individual initiatives, personal industry and loyalty. Burton's analysis showed a significant relationship between organizational culture and organizational citizenship behavior and between managerial values and organizational citizenship behavior.

Musacco (2000) investigated the relationship between organizational trust and organizational productivity and observed that a relationship exists between trusting interactions, mistrusting interactions, performance and job satisfaction.

Williams (2003) assessed and determined the impact of HR practices on workplace trust, job satisfaction, commitment, effort and perceived organizational performance. His study further demonstrated the need for public organizations to re-evaluate their current battery of HR practices in an attempt to improve overall performance.

Gavino (2003) integrated Strategic HRM, Social Exchange and Perceived Organizational Support and presented a model of impact of a comprehensive set of HR practices on the employee attitudes and behavior. Also he proposed and his analysis supported the two types of HR practices - discretionary which includes training, pay for performance, performance management, promotional

opportunities, selection, decision making, developmental opportunities and participation; and non-discretionary practices which includes benefits enrollment, information provided by HR, pay accuracy and new processes. Gavino (2003) also observed that the model of POS and the set of HR practices support each other significantly. Ordiz-Fuertes and Fernandez-Sanchez (2003) provides an exploratory view of nature of the contexts that conditions for the adoption of high performance work practices and examined the incidence of high-involvement practices along with the variables that are associated with the adoption of these practices. Further, they have also analyzed the influence of aspects including size, age, competitive advantage, activity sector, and existence of recent crisis, culture, leadership style and the competitiveness of the environment on the adoption of high-involvement work practices.

Stewart (2004) observed and supported the arguments that employees in an organization evaluate dimensions of character based trust in the organization and trustworthiness of their immediate management and they too get influenced by formal HR character based development program and that the overall factors of employee trust and job satisfaction are correlated.

Kinnie, Hutchinson, Purcell, Rayton and Swart (2005) examined the relationships between employees' satisfaction, HR practices and their commitment to the organization. The results of the study revealed that satisfaction with some HR practices appears to be linked to the commitment of all employees, while the link for others varies between the three sampled employee groups of professionals, line managers and workers.

Mulki, Jaramillo and Locander (2006) examines the relationships among ethical climate, trust in supervisor, job satisfaction, organizational commitment, and turnover intention and indicated that ethical climate is a significant predictor of trust in supervisor, job satisfaction, and organizational commitment. They also state that trust in supervisor is an antecedent of job satisfaction and turnover intention.

Parry, Dickmann and Morley (2008) explored the background of HRM in context of North American companies and examined the HR preferences of subsidiaries originating in North America and operating in diverse liberal and coordinated market economies in order to test the extent to which the host context influences the pattern of HR policies and practices pursued. The results revealed that the pattern of HR practices pursued by these companies varies widely depending on whether they are operating in liberal or coordinated market economies, lending support to the importance of context as a determinant of the likelihood of, and limits to, the transfer of HRM practices and preferences.

Andrews, Baker and Hunt (2011) explored the positive relationship between corporate ethical values and person-organization fit and its effects on organization commitment and job satisfaction. They also examined the construct of moral intensity as a moderator of the person-organization fit -commitment relationship as well as the person-organization fit -job satisfaction relationship and as a subjective variable based on the perceiver rather than an objective characteristic of ethical issues and found that moral intensity strengthen the relationships between person-organization fit and satisfaction and person-organization fit and commitment.

Lobo (2011) while exploring the concept of employeeship and the latest corporate trend, described employeeship as creating an atmosphere that urges individuals to develop through their work and synergize the others to accomplish greater goals jointly than individually, thereby, making the achievement of organizational goals greater than the mere attainment of individual goals. Further, he also emphasized that personnel policies, employee loyalty; commitment and responsibility are key factors for the success of organization.

### **OPERATIONAL CONCEPT**

For the purpose of the study, the operational concept of HR oriented Personnel Policies and their impact on Employeeship, is when the organization believe that its success is mainly dependent on the joint efforts of human resource rather than other means. And, therefore, the organization makes all provisions in its personnel policies for the overall development and betterment of employees so that enthusiastically they participate in inculcating and strengthening employeeship culture for effective accomplishment of organizational goals.

### **FOCUS AND OBJECTIVE**

The focus of the study is to examine the impact of personnel policies on prevalence of employeeship culture in the organizations. And, thus, the core objective of the study is to examine the aspect of HR orientation in personnel policies and its impact on prevalence of Employeeship Culture in Indian organizations.

### **HYPOTHESIS**

In view of the importance of HR orientation in personnel policies and their impact on employeeship culture, it may be hypothesized that stronger the orientation of Personnel Policies towards Human Resource of the organization, healthier would be the employeeship culture.

## **RESEARCH METHODOLOGY**

### **Research Design**

The research design of the present study is exploratory-cum-descriptive cum diagnostic. In recent times, though, some isolated studies have been conducted on different aspects of the personnel policies but no exclusive and comprehensive research study has been conducted by earlier scholars to examine the prevalence of employeeship culture in organizations on the basis of HR oriented Personnel Policies which makes the present study exploratory in nature. Also as evident, the study builds its groundwork on the basis of the conducted review of relevant literature that makes this study descriptive. The study is diagnostic, since an attempt has been made to see the importance of HR oriented personnel policies and their impact on prevalence of employeeship culture in the sampled organizations.

### **Universe and Survey Population**

Five different sectors including banking, consumer durables, information technology, production and telecom, operative in India comprises the universe of the study. The survey population of the study has been confined to only twelve organizations which have been selected by using purposive non-random sampling technique. Accordingly, four banks including Bank of America, Royal Bank of Scotland, HDFC Bank and State Bank of India have been chosen to represent the Banking sector; Samsung and Haier represents the consumer Durables sector; Tata Consultancy Services and Infosys have been selected from Information Technology sector; APL Apollo Tubes and Coal India Limited represents the population from Production sector; whereas, Bharti Airtel and ZTE India have been picked up to represent Telecom sector.

### **Sample and Sampling Technique**

Since the respondents have taken more or less the same position pertaining to the statements on HR oriented personnel policies and employeeship culture included in the data collection instrument, a uniform number of Managers / Executives was chosen from all the selected organizations to represent the sample of the respondents. Further, a total of 300 respondents comprising of 25 Managers / Executives from each sampled organization have been chosen due to homogeneity in their perceptions, on the basis of non-random-purposive and quota sampling techniques.

### **Data Collection**

As the nature of the research is empirical, and, therefore, the observations and inferences of the study are mainly drawn on the basis of collected primary data. For the collection of primary data we confined mainly to the techniques of questionnaire, telephonic discussion with respondents and physical observations at workplace. To adjudge the importance and prevalence of HR oriented Personnel Policies and its impact on employeeship culture, the responses were obtained on fifteen statements pertaining to the aspects including: importance given to employees in the organization in relation to other resources; dependence of the organizational development and its productivity on development of its employee; determination of relationship between organization and employees; improvement in quality of the product; freedom for work in all functional areas; developing democratic culture and focus on humor to strengthen interpersonal relations; and creating informal and conducive environment in the organization. The Likert-type five point Scale was developed and used to measure the perceptions of respondents on each item. The developed scale was tested for its reliability using Spearman Brown Split half method and test- retest method and validity of the scale was also established on the basis of opinions of experts and by calculating correlation between items and total obtained scores for measurement of prevalent HR orientation of the personnel policies and their impact on employeeship culture in the organization.

### **Analysis**

The analysis of the study has been conducted mainly by application of simple statistical techniques using PSAW statistical package version 18.0. To study the importance and extent of HR orientation in personnel policies and their impact on existence of employeeship culture in the organizations, the mean scores, cumulative mean scores along with standard deviation from each organization have been computed. Further, to confirm the differences and variance statistically, One-way ANOVA was applied, followed by application of Range Test (Post Hoc Group Comparison) to explore the significantly differing groups. Also a statement and organization-wise percentage analysis was conducted to confirm the results.

For the analysis of prevalent Employeeship culture in the sampled organizations on the basis of HR oriented Personnel Policies, the simple mean scores of the respondents of each organization were calculated ( $n = 25$ ), and the results of which have been tabulated in Table 1.

As per results, obtained mean values of the responses, Bank of America have the highest score followed by Royal Bank of Scotland, Haier, Tata Consultancy

Services and HDFC Bank. Samsung, ZTE India, Airtel, Infosys have obtained the next highest scores, whereas, Coal India Limited and APL Apollo Tubes along with respondents from State Bank of India have the least mean scores.

**Table 1**  
**Mean Scores of Sampled Organizations on HR Oriented Personnel Policies and Prevailing Employee Culture.**

Sr.No.	Organization	Mean Scores
1.	Bank of America	65.88
2.	Royal Bank of Scotland	65.76
3.	HDFC Bank	63.88
4.	State Bank of India	43.04
5.	Samsung	60.40
6.	Haier	65.24
7.	Tata Consultancy Services	65.08
8.	Infosys	47.04
9.	APL Apollo Tubes	43.72
10.	Coal India Ltd.	46.88
11.	Airtel	52.52
12.	ZTE Telecom	55.24

Thereafter, the cumulative mean score and standard deviation of all the sampled organizations for the dimension of prevalent Employee culture in the organizations on the basis of HR oriented Personnel Policies were calculated at 56.22 with Standard Deviation at 11.47 (N = 300) and the results are presented in Table 2.

**Table 2**  
**Cumulative Mean and Standard Deviation (N = 300)**

Sr. No.	Dimensions	Mean	Standard Deviation
1.	Personnel Policy and Employee Culture	56.22	11.47

The calculated mean scores given in Table 1 which differ between the groups of the organizations, were analysed further for variance, and One Way Analysis of Variance (ANOVA) was applied to examine whether these mean score differences are statistically significant or not. And the results revealed that the

responses of the respondents of the twelve organizations in context to HR oriented Personnel Policies constructing the Employeeship Culture, differed significantly with "F" ratio 38.43, which is significant at 0.01 level of confidence and at df.11 and 288 (Table 3).

**Table 3**  
**Summary Table of One-way Analysis of Variance (ANOVA)**

Sr. No.	Dimensions		Sum of Squares	df	Mean Square	F
1.	Personnel Policy and Employeeship Culture	Between Groups	23411.39	11	2128.31	38.43**
		Within Groups	15950.64	288	55.38	
		Total	39362.04	299		

\*\* Significance at .01

According to the obtained value of "F" it is evident that at least one group is significantly different from the other on this dimension. To examine this significantly differing pair of groups, there are two alternatives available, either employing the 't'-Test for sixty six combinations for twelve groups or applying

**Table 4**  
**Summary Table of Duncan's Range Test (Post Hoc Group Comparison)**

Sr. No.	Organization	Subset for alpha = .05 (n = 25)			
		1	2	3	4
1.	State Bank of India	43.04			
2.	APL Apollo Tubes	43.72			
3.	Coal India Limited	46.88			
4.	Infosys	47.04			
5.	Airtel		52.52		
6.	ZTE India Ltd.		55.24		
7.	Samsung			60.40	
8.	HDFC Bank			63.88	63.88
9.	Tata Consultancy Services				65.08
10.	Haier				65.24
11.	Royal Bank of Scotland				65.76
12.	Bank of America				65.88

Means for groups in homogeneous subsets are displayed.

Harmonic Mean Sample Size = 25.

Duncan's Range Test (Post Hoc Group Comparisons) to identify which combinations of groups are different. Finally, the Duncan's Range Test, was used for further statistical analysis, as this test is more economical and only one time computation would provide the required information.

According to the results of Duncan's Post Hoc comparisons, among the responses from the respondents in terms of obtained mean scores, Bank of America scored the highest and on the other hand, the score of State Bank of India was found to be lowest and significantly different from rest of the organizations. As a result of the Post Hoc comparison of the scores, the twelve organizations formed four subsets based on the significant differences in the scores. Bank of America, Royal Bank of Scotland, Haier and Tata Consultancy Services with higher scores was found to be forming subset (4), followed by the subset (3) formed by HDFC Bank and Samsung, with slightly lower scores than the Subset (4). ZTE India and Airtel formed another subset (2) with scores slightly lower than the other two subsets and Infosys, Coal India Limited, APL Apollo Tubes and State Bank of India forming the fourth subset (1) with the lowest scores.

Though the organizations within the subsets do not tend to differ significantly from each other but there is significant difference between the subsets 1, 2, 3 and 4. However, in case of subset (3) and (4) the difference between organizations is marginal (Refer to Table 4).

On the basis of percentage analysis, it may be observed that the HR oriented personnel policies influence the prevalence of employeeship culture, which confirms the results obtained through Mean Scores, Standard Deviation, Analysis of Variance and Duncan's Range Test, as the overall percentages of the sampled organizations range between 57.4 on lower side and 87.8 on the higher side. It is least for State Bank of India, followed by APL Apollo Tubes, Coal India Limited and Infosys with overall percentages ranging between 57.4 and 62.7 on the scale. On the other hand, the policies of Bank of America are most HR Oriented followed by Haier, Tata Consultancy services, HDFC Bank and Royal Bank of Scotland with recorded overall percentage scores between 84.0 and 87.8 (Refer to Table 5).

Similarly, the item-wise percentage analysis also endorsed that HR orientation of personnel policies is essential for strong employeeship culture in the organization as the obtained scores for all the fifteen items are ranging between 70.5 per cent and 81.3 per cent. However, employees of State Bank of India, APL Apollo Tubes and Coal India Ltd. are of the opinion that their Personnel policies have least HR orientation as they are not being provided freedom to work

**Table 5**  
**Summary of Percentage Analysis on Personnel Policies and Prevailing Employees Culture**

Sr. No.	Statement / Organization	Bank of America	Royal Bank of Scotland	HDFC Bank	State Bank of India	Samsung	Haier	Tata Consultancy Services	Infosys	APL Apollo Tubes	Coal India Limited	Airtel	ZTE India	Composite
1.	People are considered as most important resources	86.4	90.4	88	77.6	86.4	88.8	84.8	48	80	77.6	81.6	86.4	81.3
2.	Organization believes in development of employee	90.4	88	86.4	56	84	88.8	84.8	52.8	50.4	59.2	80	73.6	74.5
3.	Organization-employee Relationship based on the balance of input and output of both	92.8	88	84.8	66.4	77.6	84.8	81.6	60.8	66.4	70.4	60.8	76	75.9
4.	Employees work to improve productivity	92.8	84.8	83.2	50.4	80.8	86.4	81.6	64.8	48.8	56.8	73.6	67.2	72.6
5.	Employees work to improve relations	93.6	86.4	80.8	56	77.6	85.6	87.2	64	64	60.8	70.4	58.4	73.7
6.	Employees work to improve quality	96.8	92	85.6	54.4	81.6	87.2	92	80	52.8	64.8	81.6	73.6	78.5

Contd. Table 5

7.	Employees are free to work in all functional areas	80.8	88.8	83.2	46.4	79.2	87.2	93.6	71.2	51.2	44.8	54.4	64.8	70.5
8.	Organization is a learning organization	86.4	85.6	84	55.2	84.8	88.8	83.2	75.2	52.8	60.8	61.6	69.6	74
9.	Organization have a culture of openness and mutual respect	87.2	88.8	84	59.2	85.6	89.6	81.6	72	52.8	71.2	73.6	75.2	76.7
10.	Organization does everything for individual's development	88	88.8	84.8	65.6	77.6	85.6	73.6	60	46.4	76.8	76	75.2	74.9
11.	Organization helps individual to change job within or outside the organization	84.8	89.6	88.8	59.2	76	84	94.4	60.8	61.6	62.4	64	72	74.8
12.	Every employee is determined to create a 'we' culture	84.8	87.2	87.2	57.6	78.4	85.6	97.6	62.4	72.8	56.8	64.8	80.8	76.3
13.	Humour is a natural part of the organization	84.8	84.8	82.4	56	81.6	88.8	76.8	67.2	68.8	53.6	68	80.8	74.5
14.	The atmosphere in our organization is informal and relaxed	79.2	86.4	86.4	56.8	80	87.2	96.8	59.2	63.2	64.8	69.6	76.8	75.5
15.	Everybody feels comfortable in organization	88.8	85.6	88	44	76.8	86.4	92	42.4	42.4	56.8	70.4	74.4	70.7
	N* items = 1875	87.8	84	85.2	57.4	80.5	87	86.8	62.7	58.3	62.5	70	73.7	75

in all functional areas for better understanding of their organization, not getting ample opportunities for their development, feeling uncomfortable in their organizations and, consequently, they do not exert much to improve the organizational productivity, relations and quality. In case of Infosys too employees perceive that their organization does not consider employees as most important resource and also lacking willingness to develop them for enhancing their talent and, hence, they do not feel comfortable with the organization. However, it may be because of employees' higher expectations from the organization.

### **MAJOR OBSERVATIONS**

The following observations may be recorded, on the basis of One-way ANOVA, Duncan's Range Test and statement and organization-wise percentage analysis :

- The responses of the respondents of twelve organizations in relation to prevalent employeeship culture on the basis of HR oriented personnel policies differ substantially with the value of "F" significant at 0.01 level of confidence.
- According to the respondents of Bank of America who have secured highest mean score, it can be inferred, that their personnel policies are highly HR oriented and contribute towards Employeeship culture. On the other hand, as per the responses of the respondents with lowest mean score, the personnel policies of State Bank of India, somehow, are not HR orientated and does not leads to the employeeship culture.
- The organizations falling within the subset (4) formed by the scores on the higher side: Bank of America, Royal Bank of Scotland, Haier and Tata Consultancy Services do not differ much on the responses internally and have a positive attitudinal orientation towards the employeeship culture on the basis of their personnel policies, when compared on the Duncan's Post Hoc Test.
- The organizations falling within the subset (3) formed by HDFC Bank and Samsung do not differ much within themselves and even with the organizations forming the subset (4) on the responses and have an cognitive element of employeeship culture in their personnel policies.
- The organizations representing the subset (2) formed by ZTE India and Airtel do not differ much on the responses inwardly but differ significantly from all the other organizations forming the subsets

(1), (3) and (4). And, thus, the personnel policies of ZTE India and Airtel are considerably indicating low level of employeeship culture orientation.

- The organizations: Infosys, Coal India Limited, APL Apollo Tubes and State Bank of India which formed the subset (1), are non significant within themselves having significantly lower scores. Therefore, these organizations do not show any element of employeeship culture in their personnel policies.
- The analysis was also conducted by calculating percentages, and the obtained percentage Scores of 15 items included in the scale for all the 12 organizations reveals that with significantly lower scores, the personnel polices of State Bank of India, APL Apollo Tubes, Coal India Limited and to some extent even Infosys are not HR oriented and does not contribute in creation and prevalence of employeeship culture. Though the respondents from other organizations have indicated that their Personnel policies are highly or at least moderately HR oriented and that the employeeship culture in their organizations prevail on the basis of these policies.
- Further, the results of percentage analysis also reveals that the State Bank of India, APL Apollo Tubes, Coal India Limited and Infosys with low scores ranging between 57.40 per cent and 62.70 per cent are particularly pertaining to items like: Organization's belief on development of employee, Employee's efforts to improve productivity, relations and quality, freedom to work in all functional areas, aspect of learning organization and a general opinion on the feeling of comfortable in the organization, on which lowest scores are obtained (Table: 5).

On the basis of above description, it could be inferred that the prevalent employeeship culture in sampled organizations pertaining to Human Resource Orientation of their personnel policies differ substantially, however, it is significant. Further, the analysis also reveals that the personnel policies of Bank of America, Haier, Tata Consultancy Services, HDFC Bank and Royal Bank of Scotland are positively oriented towards employeeship culture particularly in comparison to State Bank of India, APL Apollo Tubes, Coal India Limited and Infosys. Hence, our hypothesis that stronger the orientation of Personnel Policies towards Human Resource of the organization, healthier would be the employeeship culture is proved and accepted.

The literature and the relevant studies on the aspect pertaining to the personnel policies contributed by Becker and Gerhart (1996); Musacco (2000); Ordiz-Fuertes and Fernandez-Sanchez (2003); Williams, J. G. (2003); Burton (2003); Gavino (2003); Stewart (2004); Kinnie, et al. (2005); Mulki, Jaramillo and Locander (2006); Parry, Dickmann, and Morley (2008); Andrews, Baker, and Hunt (2011) and Lobo (2011) also confirm and affirm the above obtained results of the study.

### **DEFICIENCIES**

On the basis of the above results and observations relating to the HR Oriented personnel policies and their influence on prevalence of employeeship culture, some of the major deficiencies may be outlined. From the outcomes of the study it could be exhumed that the personnel policies of State Bank of India, APL Apollo Tubes, Coal India Limited and Infosys are not strongly HR oriented and are also not in harmony with the employees' development, and, thus, do not constitute employeeship culture in the organizations. As disclosed, in these organizations employees are not free to work in all functional areas to have an overall exposure for better understanding of their organizations, they feel that organizations do not believe in their development, employees also do not feel comfortable and, thus, they are lacking interest to improve the productivity, relations and quality in their respective organizations. The employees also stated that the overall atmosphere in the organization is not very informal and relaxed.

### **RECOMMENDATIONS**

On the basis of above identified deficiencies relevant to the aspect of HR Oriented Personnel Policies and prevailing employeeship culture, it is strongly recommended that :

- State Bank of India, APL Apollo Tubes, Coal India Limited and Infosys must incorporate and make their personnel policies more HR oriented. They are required to believe and value their human resources and should focus on their development in order to motivate the employees for improving the overall productivity, relations and quality.
- These organizations need to bring an element of freedom in their policies and create a culture where the employees are allowed to take initiative and contribute in all the functional areas of the organization and can also transform the organization into a learning and progressive institution.

- Also, these organization needs to inculcate a culture of collectivism and teamwork along with a balanced, informal and relaxed environment, where the employees feel comfortable and can enjoy openness to develop new ideas and have a mutual trust and respect for each other.
- Undoubtedly, the personnel policies of rest of the sampled organizations are HR oriented and adequate to take care of the employeeship culture, however, they are required to focus on effective implementation of various components of their HR policies for the promotion of "employees first" philosophy.

## CONCLUSION

Thus, from the observations drawn on the basis of above statistical results it may be accentuated that except State Bank of India, APL Apollo Tubes, Coal India Limited and Infosys, the personnel policies of all other organizations are HR oriented and promote employeeship culture. Specifically, the policies of Bank of America have the strongest orientation towards HR along with Haier, Tata Consultancy Services, HDFC Bank and Royal Bank of Scotland. The obtained results also substantiate that HR oriented personnel policies and prevalent employeeship culture are positively associated to each other.

Though, the study has been conducted under a set of inevitable limitations, but, its observations could be of meaningful use for the business organizations in order to strengthen the core competencies and enhancing the overall productivity, improving inter-personal relationships, quality and employeeship culture by designing their personnel policies more HR oriented. Correspondingly, the results and observations of the study shall be of interest to the academics and researchers to carry out further research studies on the aspect and to find out some more viable mechanism towards progressiveness of the organizations.

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