

## **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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