

DIFFERENCES IN MOBILE SERVICE PERCEPTIONS: COMPARISON OF STUDENTS AND STAFF AT A BUSINESS UNIVERSITY

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Abstract:

Mobile services are widely used all over the world and with the increase of mobile service users the competition between different mobile service providers is also increasing in every country. Mobile service users are very conscious about network quality, perceived value, billing service, satisfaction etc.

Perception of users about different services and packages offered by different mobile service providers varies age wise, gender wise, country wise etc.

This study aims to investigate the difference in mobile service perception and its impact on perceived value, satisfaction, loyalty between two significant groups of mobile service users, the student and staff of a big business university at Karachi.

A group of statistical technique comprising analysis of variance, regression and inferential statistics are used for testing hypothesis about the attributes and for developing model of loyalty.

The results identify the mobile service quality attributes that are important for two groups of users. This study also finds significant difference between the two groups of users in terms of effect of perceived economic and emotional value, satisfaction, network quality and loyalty.

Key Words: Customer loyalty, customer satisfaction, perceived value, network quality Mobile service .

JEL Classification: M3310

I INTRODUCTION

Mobile phones are widely used all over the world. The number of mobile users around the world was 1.5 billion at the middle of the year 2004 which is about 25% of the population (Mobile Tracker: Cell phone Demand 2005). By the end of the year 2005, it reached two billion (CNN 2005). In the year 2009, 40% of the world population were mobile phone users (Gartner; 2009)

According to Pakistan Telecommunication Authority (PTA) Industry Analysis Report 2008 Cellular mobile services in Pakistan commenced in the 90's with two mobile service provider Paktel and Pakcom (Instaphone). There has been strong growth in the cellular market. By the end of 2007; five cellular operators were in the market in Pakistan.

The growth rate of number of subscribers was 80% in the year 2007. The total subscribers were 76.9 million by Dec. 2007, it was 34.5 millions in the year 2006, and 12.7 millions in 2005. In 2008-09, the cellular mobile companies added over 6.3 million subscribers, while the previous year, the addition was about 25 million. During the period 2007-08 the number of subscribers were 88 millions, 94.3 millions during the period 2008-09, about 97.6 millions by the end of year 2009 and 95.4 millions by the end of Jan. 2010 (PTA report on March 11, 2010). In USA, Mexico, Hong Kong, Taiwan, China studies have been made about the difference in perception of mobile service between users of different age group. We have not found any such study about the users of mobile services in Pakistan.

The purpose of this study is to investigate the difference in mobile service quality perceptions and its impact on perceived value, satisfaction, and loyalty between two important mobile service users groups i.e. students and staff at a leading Business university at Karachi in 2010.

As the usage pattern of these two groups is distinct, the life style of these two groups as well as the technology diffusion may cause significant differences in their satisfaction and loyalty decisions.

II. LITERATURE REVIEW

Kumar, A and Lim, H(2006) under took this study to investigate the effects of age on mobile service quality perceptions and its impact on perceived value, satisfaction and loyalty decisions with respect to two different consumers groups 12 years to 26 years termed as Generation y and 42 – 60years termed as Baby boomers.

They have collected data for the age group 18-24 years old from a sample of 159 out of the total population of the students at Southern University USA, using the method of convenience sampling. The data for the persons of the age group 42-60 years has been selected on the basis of a sample size of 139 through a web-based survey. In both the groups, the respondents are only mobile services users.

In this study analysis has been performed in three steps.

1. Separate baseline models have been established for both the groups Gen Y and baby boomers by using the data sets for Gen Y and baby boomers respectively. The significant paths were reconfirmed by using the multi-group SEM model. Chi Square statistic has been used to test the goodness of fit.
2. In order to assess the metric equivalency of the constructs in the two groups, a measurement model has been fitted. Goodness of fit test has been performed.
3. At the final stage, to test the equality of the structural parameters additional constraints were added and test¹ of invariance has been performed by using Chi- Square statistic.

¹*They have used test of invariance to discover that the structural parameters are equal or not across the groups of the baby boomers and Generation-y¹*

They have tested several hypotheses.

- About the effect of network quality on perceived economic and perceived emotional value. They have concluded that there is significant positive effect of network quality on perceived economic and emotional value for both groups.
- About the effect of billing system on perceived economic value and perceived emotional value for both age groups. They have concluded that there is a significant difference between billing system and perceived economic and emotional value for the two groups.
- About the effect of counter service quality on perceived economic value and perceived emotional value for the two groups. They have concluded that customer service quality has an insignificant relationship with perceived economic value and emotional value for baby boomers while customer service quality has a positive effect on perceived emotional value alone for Gen Y-ers.
- About the effect of emotional value on satisfaction for the two age groups. They have concluded that there is significant difference for both the groups with respect to emotional value and satisfaction; perceived emotional value has a greater effect on Gen Y-ers than the baby boomers.
- About the effect of perceived economic value on satisfaction for the two age groups, it has been observed that there is a positive significant effect of perceived economic value on satisfaction for baby boomers but not for Gen-Y and hence the effect of perceived economic value on satisfaction is greater for baby boomers.

Relationship between Satisfaction and Loyalty has been studied and it was found that there is a positive relationship between satisfaction and loyalty in both age groups.

Yang, Z and Peterson, R.T (2004) have undertaken a study to investigate the moderating effects of switching over

costs on customer loyalty through both satisfaction and perceived value measures.

They have collected data through a Web-based survey.

A random selection of 4000 subjects from an e-mail list provided by an e-mail broker has been selected and respondents were invited to participate in the survey. Responses from 257 participants were received by the authors, including 22 incomplete or duplicated responses, therefore the actual sample size is 235. The analysis has been performed in four steps

1. In the first step, exploratory factor analysis has been performed to determine the underlying factor structure of the scale items.

2. In the second phase, confirmatory factor analysis has been performed.

Chi-Square statistics have been used and goodness of fit test has been performed in order to test the fitting of the model.

3. The discriminant validity of the measures has been examined by two different procedures.

- a) The AVE² has been compared with the square of the parameter estimate among the latent variables.
- b) The discriminant validity of each construct has been determined by loading higher on the construct of interest than any other variable.

4. Simultaneous maximum-likelihood-estimation procedures have been used in order to examine the hypothesized relationships among perceived, customer satisfaction, and customer loyalty. Goodness of fit test has been performed.

They have tested the hypothesis:

- About the effect of customer loyalty on customer perceived value. As the difference is significant, therefore

it is concluded that customer loyalty will be positively influenced by customer perceived value

- About the effect of customer loyalty on customer satisfaction. As the difference is significant, therefore it is concluded that customer loyalty will be positively influenced by customer satisfaction.
- About the customer satisfaction on customer perceived value. As the difference is significant, therefore it is concluded that customer satisfaction is positively influenced by customer positive value.
- About the level of switching cost on customer loyalty through customer satisfaction, As the difference is insignificant, it is concluded that the higher the level of switching cost customer loyalty will not lead to greater customer satisfaction.
- About the level of switching cost on the customer loyalty through perceived value. As the difference is insignificant, hence it is concluded that the higher the level of switching cost, the perceived value will not lead to greater customer satisfaction

Anderson, R.E and Srinivasan, S.S (2003) undertook a study to observe the impact of satisfaction on loyalty in electronic commerce (e-commerce). In order to observe the relationship between satisfaction and loyalty, they included the variables convenience motivation and purchase size as consumer level factors where as trust and perceived values were included as business level factors.

² *The AVE (Average Variance Extracted) represents the amount of variance captured by the constructs measures relative to measurement error and the correlations among the latent variables.*

Initially they selected a random sample of 5000 consumers from a large list of e- retailing consumers maintained by an online marketing research firm. They collected the data by sending an invitation through an e-mail to each of the 5000 respondents and 1211 complete and usable responses were received. The representativeness of the data has been evaluated by comparing the collected sample data with the data collected by a Greenfield Online study showing similar demographic characteristics. To measure various constructs, validated items used by other researchers have been adapted.

For the purpose of analysis, the sample has been split in to two sets:

- (a) An exploratory data set of 360 observations.
- (b) The model estimation data set of 851 observations.

1. An exploratory factor analysis technique has been applied to the exploratory data set and internal consistency estimates were obtained. High internal consistency between various constructs was observed on the basis of the estimates.

2. The model for loyalty has been obtained on the basis of the model estimation data by applying regression analysis. The coefficient alphas, means and standard deviations for various constructs on the basis of model estimation data sets have been obtained.

The regression model which was run in this research paper is as follows:

$$LT = g_0 + g_1 SA + g_2 TR + g_3 PV + g_4 IN + g_5 CM + g_6 SA*TR + g_7 SA*PV + g_8 SA*PS + g_9 SA*IN + g_{10} SA*CM + e$$

LT: e- Loyalty

SA: e- Satisfaction

TR: Trust in the e-Business

PV: Perceived value

IN: Inertia

CM: Convenience orientation

PS: Purchase size

Their tested hypotheses are:

- About the effect of the level of e-satisfaction on the level of e-loyalty. As the difference is significant, therefore it is concluded that the higher the e-satisfaction, the higher the e-loyalty
- That the impact of customer e-satisfaction on e-loyalty is moderated by inertia. As the difference is significant, it is concluded that e-satisfaction will have a higher impact on e-loyalty at a lower values of inertia than at higher values of inertia.
- That the impact of customer e-satisfaction on e-loyalty is moderated by convenience motivation. As the difference is significant, it is concluded that convenience motivation positively moderates the impact of customer e-satisfaction on e-loyalty.
- That the impact of customer e-satisfaction on e-loyalty is moderated by purchase size. As the difference is significant, it is concluded that purchase size moderates the impact of customer e-satisfaction on e-loyalty.
- That the impact of customer e-satisfaction on e-loyalty is moderated by trust. As the difference is significant, it is concluded that trust moderates the impact of customer e-satisfaction on e-loyalty.
- That the impact of customer e-satisfaction on e-loyalty is moderated by trust. As the difference is significant, it is concluded that trust moderates the impact of customer e-satisfaction on e-loyalty.
- That the impact of customer e-satisfaction on e-loyalty is moderated by perceived value of a Web site. As the difference is significant, it is concluded that perceived value moderates the impact of customer e-satisfaction on e-loyalty.

Definitions of Variables (Kumar, A and Lim, H, 2006)

- Service quality
- Perceived value (i.e. economic, emotional)
- Satisfaction and
- Loyalty intention

Overall service quality:

Quality is defined as the overall excellence or superiority that consumers perceive from a product/service (Zeithaml, 1998). Service quality in the use of mobile services can be perceived through both technical (e.g. pricing plans, network quality and data services) and functional attributes (e.g. billing system and customer service quality) of mobile services. Overall perceptions of service quality are formed by a consumer's evaluation of multiple quality dimensions (Gronroos, 1984). In general, researchers, agree that positive perceptions of service quality enhance consumer's perceived value and the level of satisfaction. In other words, a consumer's initial appraisal of service quality can arouse positive emotion, which results in behavioral responses (Bagozzi, 1992).

Perceived Value:

Previous studies examined perceived value in terms of monetary tradeoffs only (McDougall and Levesque, 2000) what you get for what you pay. However, consumers appear to assess perceived value not only by monetary tradeoffs but also by other psychological benefits (e.g. enjoyment and fun) (Sweeney and Soutar, 2001). Similarly, previous studies emphasized both intrinsic and extrinsic motivations as predictors of behavioral intentions (e.g. Davis *et al.*, 1989). While extrinsic motivation is goal oriented, intrinsic motivation pertains to the pleasure and inherent satisfaction driven by service experience (Vankatesh *et al.*, 2000). Therefore this study measures the effects of both perceived economic and emotional value on consumers' satisfaction.

Satisfaction and loyalty:

Satisfaction has been widely studied as a mediator between perceived value and loyalty (Andreassen and Lindestad, 1998; Cronin *et al.*, 2000). Customer satisfaction is an important factor for a long term relationship between a firm and a customer (Anderson and Srinivasan, 2003). Loyalty refers to a consumers' commitment to repurchase a preferred product or service consistently in the future (Oliver, 1980). Researcher has shown that the consumer's positive affect toward a service provider is likely to motivate the consumer to stay with the provider and also recommend the service to other (Zeithaml *et al.*, 1996). Therefore, this study measures the direct effect of satisfaction on consumers' loyalty decisions.

III. Methodology

The purpose of our research is to investigate the difference in mobile service quality perceptions and its impact on perceived value, satisfaction, and loyalty between two important mobile service users groups i.e. students and staff at a major Business University in Karachi. Consequently the group of students is appearing as the group of consumers of mobile service without income and the group of staff is the group of consumers with income.

As the usage pattern of these two groups is distinct, the life style of these two groups as well as the technology diffusion may cause significant differences in their satisfaction and loyalty decisions.

This study proposes that differences in mobile service usage between students and staff may be caused by different attributes. The following hypotheses have been tested.

H1a: customer loyalty will be positively influenced by customer emotional value

H1b: customer loyalty will be positively influenced by customer economic value

H2a: customer satisfaction will be positively influenced by customer economic value

H2b: Satisfaction will be positively influenced by customer emotional value

H3: Data services will have a greater effect on perceived economic value for students than for staff.

H4: Data services will have a greater effect on perceived emotional value for students than for staff.

These hypotheses are based on the literature survey formulated in Section II above.

Measures

The research instrument has been adapted from the researches of Kumar, A and Lim, H(2006) , Yang, Z and Peterson, R. T(2004), Anderson, R. E and Srinivasan, S.S (2003)

The likert scale rating 5 steps has been used to measure the variables

1=strongly agreed, 2=agreed, 3= don't know, 4= disagreed, 5= strongly disagreed

But for the negative response questions Q.13, 14,15and Q.25 scale rating is

1= strongly disagreed, 2=disagreed, 3=don't know, 4=agreed, 5=strongly agreed

The questionnaire comprising of the questions regarding mobile service in use, age, gender, perceived quality of mobile service, perceived value, the level of satisfaction, and loyalty.

The questionnaires for both the groups comprises of 28 questions. However the questionnaire for staff includes two additional informations about designation and education.

To measure the various concepts, validated items used by other researchers have been adapted.

To capture the consumer's perception about Billing service two items have been adapted from the study of Kumar .A and Lim H(2006). Q.8 and Q.9 of this study are similar to that of Kumar A and Lim H Questionnaire and measures the consumer's perception about billing service.

The consumer's perception about the **Network Quality** has been measured by three items. Two items have been adopted from the study of Kumar .A and Lim H (2006), Q.10 and Q.12 are common and Q.11 (see appendix II) about the **Voice Quality** has been introduced in this questionnaire.

The Consumer's perception about the **Customer Service Quality** has been measured by using three items. These items have been adopted from the studies of Kumar A and Lim H (2006), Yang Z and Peterson R.T (2004). Q.13 and Q.14 and Q.15 (see appendix II) of this study are measuring the perception about **Customer Service Quality**.

Data services in this study have been measured by using two items. These items have been adopted from the studies of Kumar A and Lim H (2006), Yang Z and Peterson R.T (2004). Q.16, Q.17 and Q. 18 (see appendix II) of this study are common and measuring the perception of consumer about **Data services**.

Perceived value includes both monetary and non-monetary benefits that consumer perceive in a service setting. In this study, we consider perceived value to include economical and emotional value (Kumar .A and Lim H, 2006), Perception about the **Economic value** has been measured by using three items. Two items have been adopted from the studies of Kumar A and Lim H (2006), Anderson R E and Srinivasan S S (2003) Q.19 and Q.20 (see appendix II) of this study are common and a new question Q.21 (Number of SMS you send per day) has been introduced.

Consumer's perception about the **Emotional value** has been measured by using three items. All items have been adopted from the studies of Kumar A and Lim H (2006), Anderson R E and Srinivasan S S (2003). Q.24, Q.25, Q.26 (see appendix II) of this study measures the consumer's perception about Emotional value.

Consumer's perception about the **Satisfaction** has been measured by using two items. Both items have been adopted from the studies of Kumar A and Lim H(2006), and Anderson R E and Srinivasan S S (2003). Q.22 and Q.23 (see appendix II) of this study measures the perception about the satisfaction.

Consumer's perception about the **Loyalty** has been measured by using two items. Both items have been adopted from the studies of Kumar A and Lim H (2006), Anderson R E and Srinivasan S S (2003). Q.27 and Q.28 (see appendix II) of this study measures the consumer's perception about the **Loyalty**.

In this study some questions different from the questionnaires of other researchers are being included due to the change of the environment, habits and behavior of the consumers. These questions are about the causes of selecting mobile service, changing mobile service, using more than one mobile service at a time, and the type of package.

The question about the rating of SMS service is not included in the questionnaire of the other researchers. (How will you rate SMS service of your selected mobile company?)

This research is different from the study of Archana Kumar and Heejin Lim (2006), Rolph E. Anderson and Srini S. Srinivasan(2003), Zhilin Yang and Robin T. Peterson (2004) on the following basis:

The groups are the students and the staff of a large educational institution in Karachi in early 2010

Some new investigations on the basis of the behavior of the consumers of mobile services in this institute are being included. (Q.2 to Q.7) in our instrument attached

In this research it is being investigated:

- Whether Data services (e.g. SMS, RINGTONES, MUSIC, and DOWN LOADS) have greater effect on perceived economic value for students than for staff?
- Whether Data services (e.g. SMS, RINGTONES, MUSIC, DOWN LOADS) have greater effect on perceived emotional value for staff than the students.
- Whether Functional service quality (billing system) has a greater effect on perceived value for staff than for students.
- Whether Functional service quality (customer service quality) has a greater effect on perceived emotional value for staff than for students.
- Whether Perceived emotional value has a greater effect on satisfaction for students than the staff.
- Perceived economical value has a greater effect on satisfaction for staff than students.
- Difference of perception between staff and student about satisfaction.
- Difference of perception between staff and student about loyalty.
- Different mobile services would make a significant difference in user's satisfaction.

Sample design:

The targeted population of this research consists of all students and staff (Teaching and Non-teaching) of a Business University.

Keeping in view the variation in the perception of the two user groups of mobile services, Stratified random sampling has been used independently for both groups in order to select

representative samples for both. The data have been collected by convenience sampling for both student and staff.

Sample size and its allocation:

For students

There were 3777 total students registered during the fall semester, 2009 at the university. They have been classified in the groups BBA (H), BS, MBA (Reg.) and MBA (Ex.)

| Groups | No. of students |
|-----------|-----------------|
| BBA(H) | 1428 |
| BS | 650 |
| MBA(Reg.) | 951 |
| MBA(Ex.) | 748 |

The size of the sample with 5% level of precision and 95% confidence level with unknown population variance is 352

The size of the sample to be selected from each stratum has been decided by proportional allocation method. The calculated sizes of the samples are 132, 61, 88, and 69 respectively.

For staff

Total staff of the university in Fall 2009 was 342. This can be split in three categories i.e. management staff (111), permanent faculty (106) and visiting faculty (125).

The size of the sample with 5% level of precision and 95% confidence level with unknown population variance is 150

The size of the sample to be selected from each category has been decided by proportional allocation method. The calculated sizes of the samples are 48, 42 and 60 respectively. Samples from both the groups have collected by convenience sampling.

- 1) Correlation analysis has been used to explore the relationship between different concepts and attributes
- 2) Regression analysis is being used to determine direction of causation.
- 3) Multiple regressions are being used to develop regression model for Loyalty.
- 4) Testing of hypothesis has been performed by using t- statistic, Chi- square statistic, analysis of variance etc.

Data Analysis:

Table 1-
Correlation analysis results based on the data of the samples for student and staff given in Table 1

| | | Independent Samples Test | | | | | | | | |
|-----------------|-----------------------------|--------------------------|------|------------------------------|---------|-----------------|-----------------|-----------------------|----------------|--------|
| | | Levene's Test for | | t-test for Equality of Means | | | | | | |
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence | |
| | | | | | | | | | Lower | Upper |
| billing service | Equal variances assumed | .747 | .388 | 2.146 | 467 | .032 | .17321 | .08070 | .01464 | .33179 |
| | Equal variances not assumed | | | 2.057 | 217.833 | .041 | .17321 | .08420 | .00727 | .33916 |
| data services | Equal variances assumed | 3.027 | .083 | 3.480 | 495 | .001 | .20277 | .06826 | .08829 | .31724 |
| | Equal variances not assumed | | | 3.286 | 240.689 | .001 | .20277 | .06171 | .08120 | .32433 |

(Ref: Table 1 Appendix I – List of Tables)

It is found that there is significant difference in the perception towards the billing service between the groups of students and staff as $P < 0.05$. This difference may be due to type of package the two groups preferred i.e. prepaid and postpaid packages

It is found that there is significant difference in the perception towards the data services between the groups of students and staff as $P < 0.05$. Students enjoy sending SMS, MMS, listening the music from internet, downloading ring tones, receiving and reading news etc. but staff is not that much pay attention towards data services.

Table 2 – Correlations between Emotional Value and Loyalty

| classification of respondents | | | emotional value | loyalty |
|-------------------------------|-----------------|---------------------|-----------------|---------|
| Students | emotional value | Pearson Correlation | 1 | .530** |
| | | Sig. (2-tailed) | | .000 |
| | | N | 351 | 351 |
| | loyalty | Pearson Correlation | .530** | 1 |
| | | Sig. (2-tailed) | .000 | |
| | | N | 351 | 351 |
| Staff | emotional value | Pearson Correlation | 1 | .677** |
| | | Sig. (2-tailed) | | .000 |
| | | N | 149 | 147 |
| | loyalty | Pearson Correlation | .677** | 1 |
| | | Sig. (2-tailed) | .000 | |
| | | N | 147 | 147 |

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

H_{1a} stated customer loyalty will be positively influenced by customer emotional value. The effect of customer emotional value on loyalty is significant as $p < 0.01$ for both the groups and Pearson correlation coefficient carries positive sign which shows that emotional value and loyalty are positively related therefore H_{1a} is supported and it is concluded that loyalty is positively influenced by emotional value for both students and staff.

Table 3 – Correlations between Economic Value and Loyalty

| classification of respondents | | | economic value | Loyalty |
|-------------------------------|----------------|---------------------|----------------|---------|
| Students | economic value | Pearson Correlation | 1 | .405** |
| | | Sig. (2-tailed) | | .000 |
| | | N | 351 | 351 |
| | loyalty | Pearson Correlation | .405** | 1 |
| | | Sig. (2-tailed) | .000 | |
| | | N | 351 | 351 |
| Staff | economic value | Pearson Correlation | 1 | .519** |
| | | Sig. (2-tailed) | | .000 |
| | | N | 151 | 147 |
| | loyalty | Pearson Correlation | .519** | 1 |
| | | Sig. (2-tailed) | .000 | |
| | | N | 147 | 147 |

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

H_{1b} stated customer loyalty will be positively influenced by customer economical value. The effect of economic value on loyalty is significant as $p < 0.01$ for both the groups and Pearson correlation carries positive sign which shows that economic value and loyalty are positively related and therefore H_{1b} is supported and it is concluded that economic value has positive influence on loyalty i.e. increase in economic value will increase the loyalty.

Table 4 – Correlations between Satisfaction and Economic Value

| classification of respondents | | | satisfaction | economic value |
|-------------------------------|----------------|---------------------|--------------|----------------|
| Students | satisfaction | Pearson Correlation | 1 | .359** |
| | | Sig. (2-tailed) | | .000 |
| | | N | 351 | 351 |
| | economic value | Pearson Correlation | .359** | 1 |
| | | Sig. (2-tailed) | .000 | |
| | | N | 351 | 351 |
| Staff | satisfaction | Pearson Correlation | 1 | .498** |
| | | Sig. (2-tailed) | | .000 |
| | | N | 149 | 149 |
| | economic value | Pearson Correlation | .498** | 1 |
| | | Sig. (2-tailed) | .000 | |
| | | N | 149 | 151 |

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

H_{2a} stated customer satisfaction will be positively influenced by customer economic value

The effect of economic value on satisfaction is significant for both groups students and staff as $p < 0.01$ for students and staff. Pearson correlation for both groups carries positive sign it shows that economic value and satisfaction are positively correlated Therefore H_{2a} is supported hence it is concluded that customer satisfaction is positively influenced by customer economic value.

Table 5 – Correlations between Emotional Value and Satisfaction

| classification of respondents | | | emotional value | Satisfaction |
|-------------------------------|-----------------|---------------------------------------------|-----------------------|-----------------------|
| Students | emotional value | Pearson Correlation Sig. (2-tailed) N | 1 351 | .542** .000 351 |
| | satisfaction | Pearson Correlation Sig. (2-tailed) N | .542** .000 351 | 1 351 |
| Staff | emotional value | Pearson Correlation Sig. (2-tailed) N | 1 149 | .602** .000 149 |
| | satisfaction | Pearson Correlation Sig. (2-tailed) N | .602** .000 149 | 1 149 |

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

H_{2b} stated satisfaction will be positively influenced by customer emotional value. The effect of perceived emotional value on satisfaction is significant as $p < 0.01$ for both groups students and staff. Pearson correlation carries positive sign for both groups, it shows that emotional value and satisfaction are positively related Therefore H_{2b} is supported hence it is concluded that satisfaction will be positively influence by customer emotional value for both groups.

Table 6 – Correlations between Economic Value and Data services

| classification of respondents | | | economic value | data services |
|-------------------------------|----------------|---------------------------------------------|-----------------------|-----------------------|
| Students | economic value | Pearson Correlation Sig. (2-tailed) N | 1 351 | .259** .000 351 |
| | data services | Pearson Correlation Sig. (2-tailed) N | .259** .000 351 | 1 351 |
| Staff | economic value | Pearson Correlation Sig. (2-tailed) N | 1 151 | .163* .049 146 |
| | data services | Pearson Correlation Sig. (2-tailed) N | .163* .049 146 | 1 146 |

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

* . Correlation is significant at the 0.05 level (2-tailed).

H₃ stated Data services will have a greater effect on perceived economic value for students than for staff. The effect of data services on economic values is significant for students as $p < 0.01$ and insignificant for staff as $p = 0.05$. It provides strong evidence to conclude that Data services have greater effect on perceived economic for students as compare to staff. It supports our H₃. It indicates data services are important measure for economic value in case of students but not in case of staff.

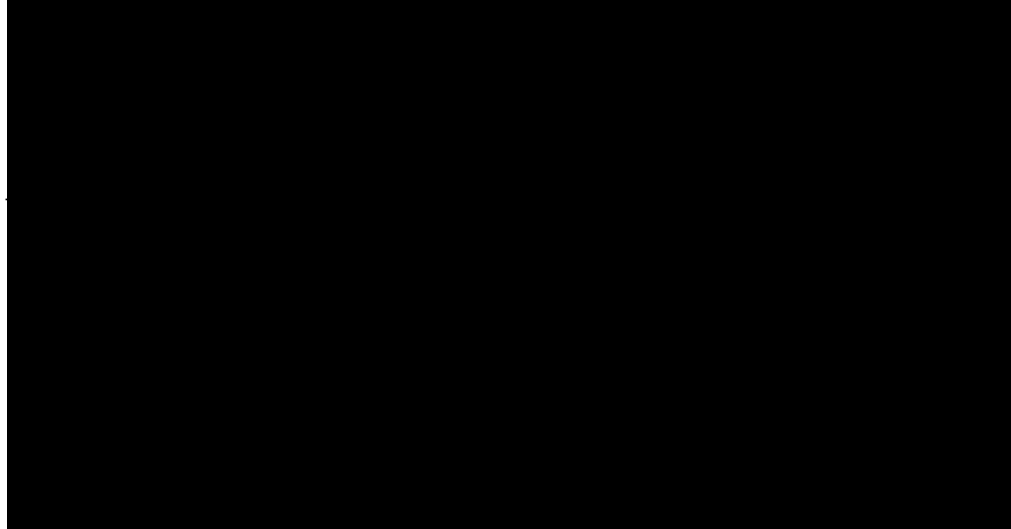
Table 7 – Correlations between Data services and Emotional Value

| classification of respondents | | | data services | emotional value |
|-------------------------------|-----------------|---------------------|---------------|-----------------|
| Students | data services | Pearson Correlation | 1 | .288** |
| | | Sig. (2-tailed) | | .000 |
| | | N | 351 | 351 |
| | emotional value | Pearson Correlation | .288** | 1 |
| Sig. (2-tailed) | | .000 | | |
| N | | 351 | 351 | |
| Staff | data services | Pearson Correlation | 1 | .096 |
| | | Sig. (2-tailed) | | .251 |
| | | N | 146 | 146 |
| | emotional value | Pearson Correlation | .096 | 1 |
| Sig. (2-tailed) | | .251 | | |
| N | | 146 | 149 | |

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

H₄ stated Data services will have a greater effect on perceived emotional value for students than for staff. The effect of data services on emotional values is significant for students as $p < 0.01$ and insignificant for staff as $p > 0.01$. It provides strong evidence to conclude that data services have greater effect on perceived emotional value for students than for staff. Hence our H₄ is being supported.

Table 8a



The overall model was found to be significant ($p < 0.01$) with an adjusted R^2 of 0.329 for students and 0.538 for staff. It indicates that the combined effect of predictors over the loyalty is significant. Model well explained the combined effect of predictors over the depended variable loyalty.

Table 8c

*Notes: * significant at $p < 0.1$; ** significant at $p < 0.05$; *** significant at $p < 0.01$*

For students:

The predictors emotional value and satisfaction are significant ($p < 0.01$), economical value is significant ($P < 0.05$) and network quality is significant ($p < 0.10$).

For staff:

The predictors emotional value and satisfaction are significant ($p < 0.01$), economical value is significant ($P < 0.05$) and network quality for staff is not significant i.e. no variations in perception about network quality among staff.

Multiple regression model obtained for Loyalty of the users towards the mobile service providers for students and staff taking group of predictors Billing service, Net-work quality, Customer support, Data services, Economic value, and Emotional value is

$$LT = \beta_0 + \beta_1 NQ + \beta_2 CS + \beta_3 DS + \beta_4 EV + \beta_5 MV + \beta_6 SA + a$$

Where NQ = Network Quality, CS = Customer support, DS = Data service, EV = Economic Value, MV = Emotional Value, SA = Satisfaction

It explains the combined effect of Net-work quality, Customer support, Data services, Economic value, and Emotional value over the loyalty. As the value of Adjusted R² for staff is greater than the value of Adjusted R² for students therefore this regression model is explaining variation in Loyalty better for staff than students. The model for loyalty has been further improved by excluding the less significant factors Net-work quality, Customer support, Data services

Table 9a



Table 9b

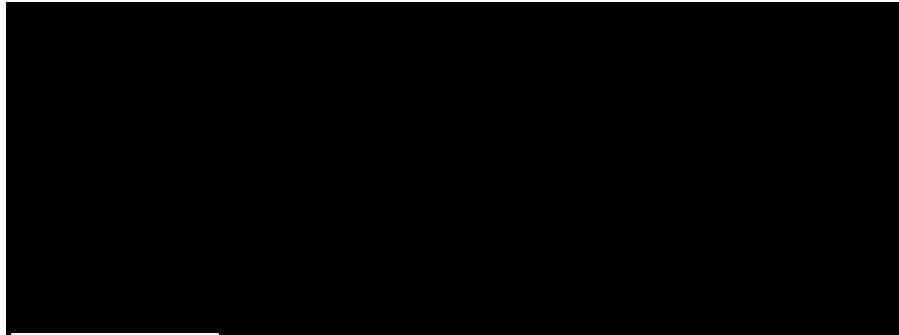
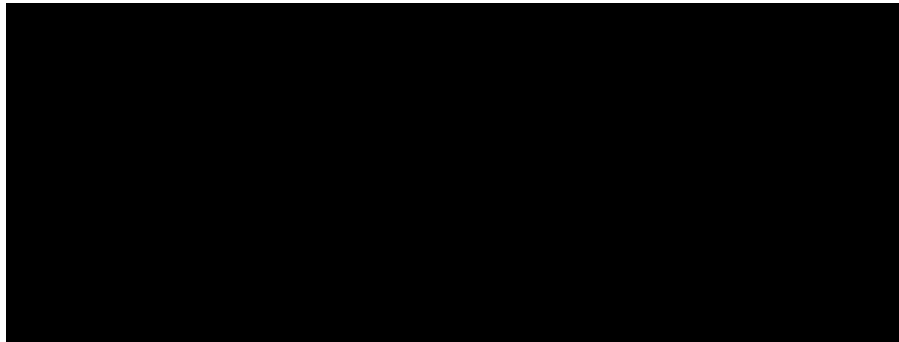


Table 9c



Notes: * significant at $p < 0.01$; ** significant at $p < 0.10$

By excluding the insignificant variables of table 8c the overall model was found to be significant ($p < 0.01$) with an adjusted R^2 of 0.367 for students and 0.570 for staff (shows an increase in adjusted R^2 for both groups)

Therefore the improved model for loyalty is

$$LT = \beta_0 + \beta_1 SA + \beta_2 EV + \beta_3 MV + \epsilon$$

Where, SA = Satisfaction, EV = Economic Value, MV = Emotional Value

Table 10a ANOVA

| | | Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|----------------|----------------|-----|-------------|-------|------|
| network quality | Between Groups | 13.391 | 4 | 3.348 | 4.027 | .003 |
| | Within Groups | 413.155 | 497 | .831 | | |
| | Total | 426.546 | 501 | | | |

Table 10b Multiple Comparisons

Tukey HSD

| Dependent Variable | (I) company | (J) company | Mean Difference (I-J) | Std. Error | Sig. | Interval | |
|--------------------|-------------|-------------|-----------------------|------------|------|-------------|-------------|
| | | | | | | Lower Bound | Upper Bound |
| network quality | mobilink | ufone | -.35411 [*] | .10710 | .009 | -.6473 | -.0609 |
| | | warid | .33996 [*] | .11453 | .026 | .0264 | .6535 |
| | ufone | mobilink | .35411 [*] | .10710 | .009 | .0609 | .6473 |
| | | warid | -.33996 [*] | .11453 | .026 | -.6535 | -.0264 |

*. The mean difference is significant at the 0.05 level.

Ref: Table A2

The technique of analysis of variance for one way classification for the data of network quality has been performed to find that all mobile service companies have same performance in respect of network quality perceived by the customer. As $p < 0.05$ therefore it is concluded that there is difference between perceived network quality of different mobile service providers. Using the post hoc test for multiple comparisons it is found that there is significant difference in the network quality perceived by the customers of following mobile services.

1. Mobilink and Ufone
2. Ufone and Warid

Conclusion:

Significant difference has been found in the perception towards the billing service between groups of students and staff which may be due to the type of packages the two groups preferred i.e. prepaid and post paid packages.

Significant difference has been found in the perception towards the data services between groups of students and staff. Students enjoy sending SMS, MMS, listening the music from internet, downloading ring tones, receiving and reading news etc. but staff do not pay that much attention towards data services.

It is found that emotional value and loyalty are positively correlated for both groups student and staff. An increase in the emotional value will increase the loyalty. The effect of economic value towards loyalty is also positive for both the groups. Therefore Loyalty of customer is positively related with Perceived value.

Economic value and Emotional value both have positive influence over the satisfaction for both groups. It can be concluded that if the mobile service provider take the measures to improve Economic value and Emotional value of the users, in

the result the satisfaction about the mobile service will be also increased.

An interesting finding in the research is that Data services has positive influence over Economic value and Emotional value for students but have no influence over the Economic value and emotional value for staff. Therefore it is concluded that the students prefer data services more as compared to staff.

It has been also found that there is significant difference in the perceived network quality provided by the mobile service providers and in the result of further study it has been observed, that there is significant difference between the Network quality, which the customer perceived between the users of Mobilink and Ufone as well as between Ufone and Warid customers.

Multiple regression model for the loyalty of the users towards the mobile service in use has been obtained which explains the variation in Loyalty as a combined effect of the predictors Net-work quality, Customer support, Data services, Economic value, and Emotional value, and satisfaction.

This model has been further improved by excluding less significant factors, Net-work quality, Customer support and Data services and containing only Economic value, Emotional value and Satisfaction as the predictors.

In general, over results indicate that various attributes of mobile services contribute to consumers' perceived economic and emotional value which leads to satisfaction and loyalty. Also, age of the user has an apparent effect on mobile service perceptions and loyalty decisions.

Acknowledgement:

I have special thanks for Rizwan Ahmed, Noman Khan(son) and Muhammad Aijaz Rasheed, who helped me and encouraged me during the preparation of this paper.

APPENDIX I

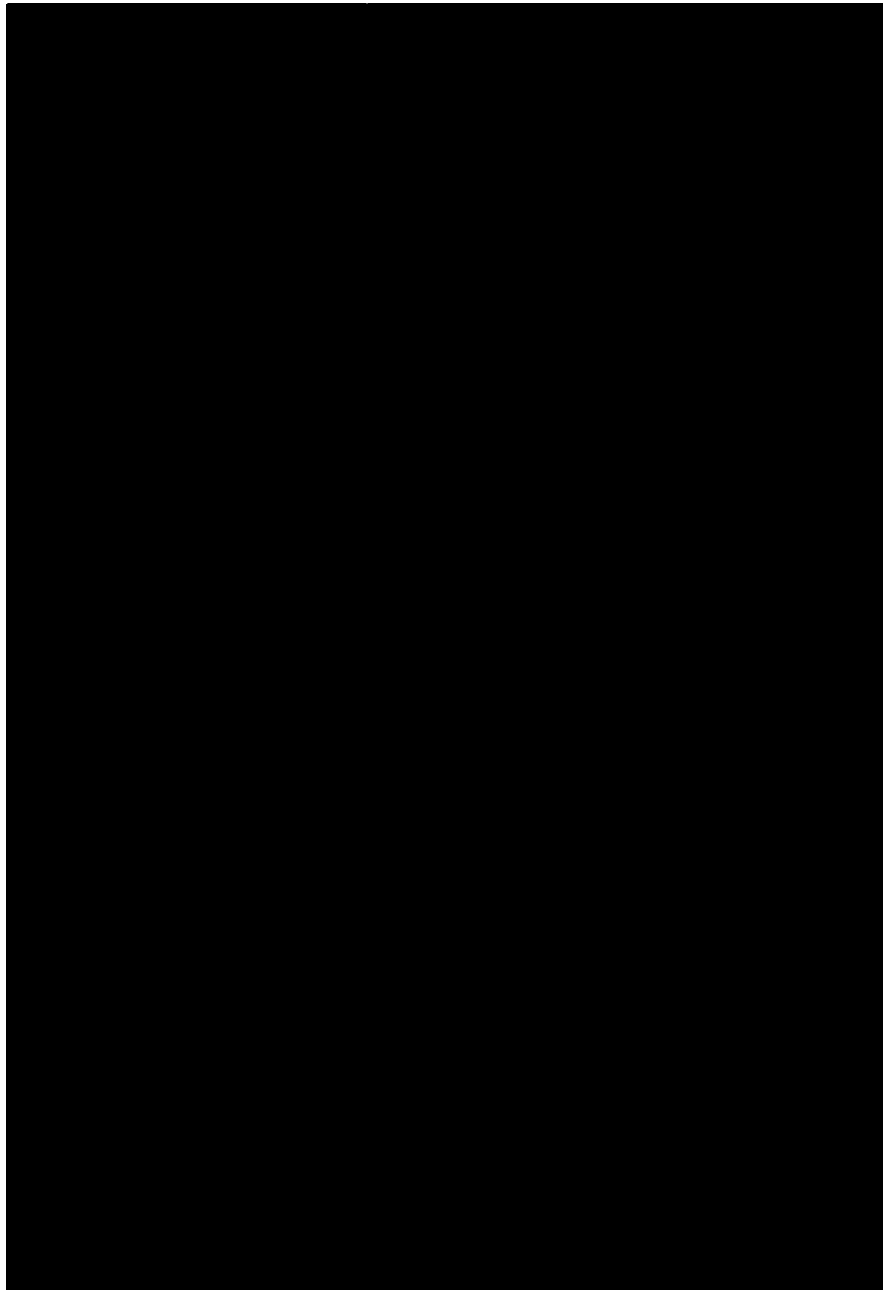
List of Tables

Table A1

| | | Independent Samples Test | | | | | | | | | |
|------------------|-----------------------------|--------------------------|------|------------------------------|---------|-----------------|-----------------|-----------------------|---------|----------------|--|
| | | Levene's Test for | | t-test for Equality of Means | | | | | | 95% Confidence | |
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | Lower | Upper | |
| billing service | Equal variances assumed | .747 | .388 | 2.146 | 467 | .032 | .17321 | .08070 | .01464 | .33179 | |
| | Equal variances not assumed | | | 2.057 | 217.833 | .041 | .17321 | .08420 | .00727 | .33916 | |
| network quality | Equal variances assumed | .224 | .637 | .858 | 500 | .391 | .05092 | .05933 | -.06565 | .16749 | |
| | Equal variances not assumed | | | .830 | 263.813 | .407 | .05092 | .06137 | -.06992 | .17175 | |
| customer support | Equal variances assumed | 17.910 | .000 | 1.365 | 498 | .173 | .04643 | .03402 | -.02041 | .11327 | |
| | Equal variances not assumed | | | 1.178 | 209.484 | .240 | .04643 | .03940 | -.03124 | .12410 | |
| data services | Equal variances assumed | 3.027 | .083 | 3.480 | 495 | .001 | .20277 | .05826 | .08829 | .31724 | |
| | Equal variances not assumed | | | 3.286 | 240.689 | .001 | .20277 | .06171 | .08120 | .32433 | |
| economic value | Equal variances assumed | .206 | .650 | .532 | 500 | .595 | .04343 | .08168 | -.11704 | .20390 | |
| | Equal variances not assumed | | | .518 | 268.570 | .605 | .04343 | .08378 | -.12153 | .20839 | |
| emotional value | Equal variances assumed | .167 | .683 | -.904 | 498 | .366 | -.06260 | .06926 | -.19867 | .07347 | |
| | Equal variances not assumed | | | -.886 | 266.925 | .376 | -.06260 | .07066 | -.20173 | .07653 | |
| satisfaction | Equal variances assumed | .031 | .860 | -.360 | 498 | .719 | -.01859 | .05166 | -.12008 | .08291 | |
| | Equal variances not assumed | | | -.360 | 279.246 | .719 | -.01859 | .05164 | -.12024 | .08307 | |
| loyalty | Equal variances assumed | .454 | .501 | -1.217 | 496 | .224 | -.09309 | .07646 | -.24332 | .05715 | |
| | Equal variances not assumed | | | -1.189 | 259.988 | .236 | -.09309 | .07832 | -.24731 | .06114 | |







10. Your preferred mobile company provides high voice quality.
 • Strongly Agreed • Agreed • Don't know • Disagree • Strongly Disagree
11. Voice quality of your selected mobile service is
 • Excellent • Good • Average • Poor • Very Poor
12. Coverage of your selected mobile service is
 • Excellent • Good • Average • Poor • Very Poor
13. When you contact customer support their behavior is rude.
 • Strongly Disagree • Disagree • Don't know • Agreed
 • Strongly Agreed
14. Service agents provide inconsistent advices.
 • Strongly Disagree • Disagree • Don't know • Agreed
 • Strongly Agreed
15. Call center personnel is not usually able to help with problems.
 • Strongly Disagree • Disagree • Don't know • Agreed
 • Strongly Agreed
16. MMS service of your selected mobile service is
 • Excellent • Good • Average • Poor • Very Poor
17. SMS service of your selected mobile service is
 • Excellent • Good • Average • Poor • Very Poor
18. Downloading ring tones, music information, and news of your selected mobile service is friendly.
 • Strongly Agreed • Agreed • Don't know • Disagree
 • Strongly Disagree
19. Call rate packages of your selected mobile service are very economical.
 • Strongly Agreed • Agreed • Don't know • Disagree
 • Strongly Disagree
20. You get all benefits for the price you are paying.
 • Strongly Agreed • Agreed • Don't know • Disagree
 • Strongly Disagree
21. Number of SMS you send per day.
 • 1-10 • 11- 20 • 21-50 • more than 50 • Don't use SMS
22. SMS and call rate packages attracted you to use your selected mobile service.

- Strongly Agreed • Agreed • Don't know • Disagree
• Strongly Disagree
23. You always feel bad about choosing your mobile service.
• Strongly Disagree • Disagree • Don't know • Agreed
• Strongly Agreed
24. You are satisfied with decision to use your selected mobile service.
• Strongly Agreed • Agreed • Don't know • Disagree
• Strongly Disagree
25. It gives you pleasure, to use the selected service.
• Strongly Agreed • Agreed • Don't know • Disagree
• Strongly Disagree
26. You feel relaxed using your mobile services.
• Strongly Agreed • Agreed • Don't know • Disagree
• Strongly Disagree
27. You say positive things about the mobile company and services you use to others.
• Strongly Agreed • Agreed • Don't know • Disagree
• Strongly Disagree
28. You want to see your friends, family members using this mobile service?
• Strongly Agreed • Agreed • Don't know • Disagree
• Strongly Disagree

References:

1. Anderson, R.E. and S. Srinivasan, S.S (2003) E-Satisfaction and E-Loyalty: A contingency Framework. *Published in Psychology & Marketing, Vol. 20(2): Pg 123-138. Published online in Wiley InterScience (www.interscience.wiley.com)*
2. Archana, K and Lim, H (2008) Age differences in mobile service perceptions: comparison of Generation Y and baby boomers. www.emeraldinsight.com/0887-6045.htm. *published in Journals of services marketing (2008) Pg.567-577.*
3. Ling Chen, Huang Wonil, Salvendy Gavriel (2006) Diversified user satisfaction with advanced mobile phone features. *Published by Springer Verlag 2006*

4. Oliver, R.L. (1980), "A Cognitive model of the antecedents and consequences of satisfaction decisions", *Journal of Marketing Research*, Vol.17, November, pp. 460-9
5. Pakistan Telecommunication Authority (PTA) Annual Report 2008-2009; Mobile Cellular Services-chapter 4, *published online by PTA (11-January-2010)*.http://www.pta.gov.pk/index.php?option=com_content&task=view&id=361&Itemid=590
6. Pakistan Telecommunication Authority (PTA) Telecom Indicators; Mobile Cellular Services*published online by PTA (11-March-2010)*. http://www.pta.gov.pk/index.php?option=com_content&task=view&id=650&Itemid=603
7. Sweeney, J.C., & Soutar, G.N. (2001). Consumer perceived value: The development of a multiple item scale. *Journal of retailing*, 77, 203-220
8. Yang, Z and Peterson, R .T (2004) Customer perceived value, Satisfaction, and loyalty: The role of Switching Costs. *Published in Psychology &Marketing*, Vol. 21(10): Pg 799-822. *Published online in Wiley Inter Science (www.interscience.wiley.com)*
9. Zins, A.H. (2001), "Relative attitudes and commitment in customer loyalty models: some experiences in the commercial air line industry", *InternationalJournal of Service Industry Management*