

# **IMPACT OF DEMOGRAPHIC VARIABLES ON SERVICE QUALITY DIMENSIONS OF MOBILE VALUE ADDED SERVICES**

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## **ABSTRACT**

*A research study was conducted with an objective to understand consumer perception towards mobile value added services. Collected data was analyzed. In this article researcher highlights the impact of demographic variables on eight service quality dimensions. The outcome of this research provides diagnostic insight into how different demographic variables influences service quality dimensions in Mobile Value Added Services.*

**Key words:** Consumer buying behavior, Consumer perception, Demographic variables, Mobile Value Added Services and Service Quality Dimensions.

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## **1. INTRODUCTION**

With the rapid development of mobile telecommunication technology and wireless network, new technologies and applications are emerging daily. In the meantime, the telecom industry has become highly competitive market. Driven by various policy initiatives the Indian telecom sector witnessed a complete transformation in the last decade. The Indian telecom industry has proved to be the fastest growing in the world and is currently the second largest globally by subscriber base.

The year 2009 was a significant year for the telecommunication industry. Several events took place during that year which changed the entire landscape of the industry and propelled it into a phase of tremendous growth and was also characterized by a continuing declining trend in Average Revenue Per User (ARPU). It was the beginning of stiff tariff war which resulted in falling ARPU's, even as the numbers of subscribers on the rise. It was further fuelled by the new entrants in to the market who introduced innovative tariff plans in order to attract subscribers resulting in a intensified war with each operator trying to outdo the other.

In order to increase average ARPU's mobile service providers introduced mobile value added services like games, ringtones, apps etc. some of these value added services are provided by, mobile service provider and other by third party generators.

The following demographic variables are considered for this study

1. Mobile service provider,
2. Gender
3. Period of technology Usage
4. Type of plan
5. Monthly expenditure and

The eight service quality dimensions are Reliability, Network quality, Content quality, Empathy, Responsiveness, Tangibility, Convenience, Assurance

## **2. LITERATURE REVIEW:**

Previous studies of marketing have pointed out that the key of corporate success and competitive advantage is the enhancement of service quality, perceived value, and customer satisfaction (Patterson & Spreng, 1997; Khatibi et al., 2002; Landrum & Prybutok, 2004; Wang et al., 2004; Yang & Peterson, 2004). As the number of studies of mobile telecom service quality is still limited, and a definite set of measurement indices for the service quality of mobile value-added services is not available, this study attempts to design a scale for measuring the service quality of mobile value-added services and further examines the relationships among service quality, perceived value, customer satisfaction, and post-purchase intention to find out which dimensions of service quality are significantly correlated with perceived value and customer satisfaction. The result can provide valuable reference information for mobile value-added service providers to manage their services and enhance their service quality.

According to Berry et al (1988), Service Quality is defined as global judgment or attitude relating to the superiority of the service. Bitner, Booms and Tetreault (1990) defines it as the customer's overall impression of the relative inferiority /superiority of the organization and its services.

Carman (1990) describes the replication and testing of the SERVQUAL battery (A. Parasuraman et al; see record 1986-10681-001), which measures the perceived quality of a service situation. The scale was tested in 4 service settings different from those of the original test: a dental school patient clinic, a business school placement center, a tire store, and an acute care hospital. Six basic questions of interest to the retailer were discussed: (1) the number of dimensions and how generic they are, (2) the extent to which item wording can be changed, (3) service situations that include multiple service functions, (4) the validity of analyzing differences between expectations and perception, (5) the point at which expectation information should be obtained, and (6) the relationship between expectations and importance.

Asubonteng and Swan (1996) define it as the difference between customer's expectations for service performance prior to the service encounter and their perceptions of the service received.

According to Hannikainen et al, (2002), service quality is capability of a network to provide services and to fulfill user's expectations. According to Telecom Authority of India (2007), service quality is an indicator of performance of a network and of the degree to which the network conforms to the stipulated norms.

Parasuraman et al. (1985, 1988) conceived that service quality is the difference between customers' expectation and their perceived performance of a service. Based on this concept, Parasuraman et al. (1988) developed the SERVQUAL model (including five dimensions, namely tangible, responsiveness, reliability, assurance, and empathy) to measure service quality. This model has drawn attention from the academic and the practical circles. However, many scholars have questioned about the conceptual framework and measurement method of this model. For instance, Cronin and Taylor (1992) pointed out that using service quality performance (SERVPERF, i.e. the perceived service in SERVQUAL) to measure service quality produces better results of reliability, validity, and predictive power than using SERVQUAL. Some other studies (Boulding et al., 1993; McAlexander et al., 1994; Parasuraman et al., 1994; Zeithaml et al., 1996) also maintained that SERVPERF is more accurate than SERVQUAL in the measurement of service quality, and SERVQUAL can provide better diagnostic information. In the studies of the information industry, similar findings have been proposed (Pitt et al., 1997; Van Dyke et al., 1997; Landrum & Prybutok, 2004), and Zeithaml et al. (2002) proposed that it is not necessary to use customers' expectation to measure the service quality of a website. Therefore, this study will directly use perceived service quality to measure the service quality of mobile value-added services.

In the research of website service quality, various measurement dimensions have been proposed according to website properties. Kuo (2003) put forth a virtual community service quality scale, using advertising mail management, customer service management, online quality and information safety, webpage design and content, and extra function and service to evaluate the service quality of a website. Yang et al. (2005) used usability, usefulness of content, adequacy of information, accessibility, and interaction to measure user's perceived quality of information presenting web portals. From the perspective of transaction process, Bauer et al. (2006) proposed eTransQual (including five quality aspects, namely functionality/design, enjoyment, process, reliability, and responsiveness) to measure the quality of online shopping services. As to the quality of mobile communication services, Chae et al. (2002) used connection quality, content quality, interaction quality, and contextual quality to measure the information quality of mobile networking services. Chae et al. (2002) examined the service quality of mobile communication services in South Korea by call quality, value-added services, and customer support.

### **3. OBJECTIVES OF THE STUDY**

1. To study and understand how different demographic variables impact consumer perception towards mobile value added services.
2. To know the relationship between demographic variables and their impact on service quality dimensions.

#### 4. RESEARCH METHODOLOGY

This study aims to understand consumer perception towards mobile value added services with special reference to Prakasam district, Andhra Pradesh. This study is based on primary data through well structured questionnaire. The relevant secondary data have been collected from various journals magazines groups and websites.

#### 5. SAMPLE SIZE:

The sample size is 511 and data were collected from student who are in the age group 18 to 25.

#### 6. STATISTICAL TOOLS

Simple percentages and ANOVA using SPSS (Statistical Package for Social Sciences)

#### 7. SAMPLING METHOD

Convenient Sampling

#### 8. RESULTS AND DISCUSSIONS

The distribution based on service providers adoption with the help of following table.

Service Provider					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	BSNL	64	12.5	12.5	12.5
	AIRTEL	145	28.4	28.4	40.9
	AIRCEL	8	1.6	1.6	42.5
	IDEA	51	10.0	10.0	52.4
	RELIANCE	22	4.3	4.3	56.8
	DOCOMO	82	16.0	16.0	72.8
	VODAFONE	121	23.7	23.7	96.5
	8	16	3.1	3.1	99.6
	UNINOR	2	.4	.4	100.0
	Total	511	100.0	100.0	

From the table 1, it is inferred that out of total sample of 511 respondents using mobile value added services 12.5% BSNL, 28.4% using Airtel, 1.6% using Aircel, 10% using Idea, 4.3% using Reliance, 16% using Docomo, 23.7% using Vodafone, 3.1% using Uninor and 0.4% by other service providers

##### 8.1. Classification Based on Plan.

The distribution based on plan of usage by respondents was analyzed with the help of following table.

Impact of Demographic Variables on Service Quality Dimensions of Mobile Value Added Services

PLAN					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	PREPAID	463	90.6	90.6	90.6
	POSTPAID	48	9.4	9.4	100.0
	Total	511	100.0	100.0	

From the above table 5.2, it is seen that out of the total sample of 511 respondents using MVA, 90.6% using prepaid and 9.4% is using post paid plan.

### 8.2. Classification Based on Length of usage:

The distribution based on length of usage (Tech. Use) by respondents was analyzed with the help of following table

TECH USE					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SIX MONTHS	32	6.3	6.3	6.3
	6 MTHS - 1 YEAR	50	9.8	9.8	16.0
	1-2 YEARS	116	22.7	22.7	38.7
	ABOVE 2 YEARS	313	61.3	61.3	100.0
	Total	511	100.0	100.0	

From the above table 5.3., it can be observed that out of the total sample of 511 respondents using MVAS, 6.3% is using less than 6 months, 9.9% is using between 6 months to 1 Year, 22.7% is using between 1-2 years and 61.3% is using MVAS for above 2 years.

### 8.3. Classification based on Gender

The Distribution based on Gender was analyzed with the help of following table

GENDER					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MALE	329	64.4	64.4	64.4
	FEMALE	182	35.6	35.6	100.0
	Total	511	100.0	100.0	

From the above table 5.4 it can be inferred that out of total respondents 64.4% of boys and 35.6% are girls are using MVAS.

### 8.4. Classification Based on Monthly Expenditure

The distribution based on monthly expenditure incurred by respondents.

MONTHLY EXPS					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<250 PER MONTH	210	41.1	41.1	41.1
	250-500 PER MONTH	179	35.0	35.0	76.1
	500-750 PER MONTH	72	14.1	14.1	90.2
	750-1000 PER MONTH	22	4.3	4.3	94.5
	>1000 PER MONTH	28	5.5	5.5	100.0
	Total	511	100.0	100.0	

From the above table 5.5 it can be observed that out of 511 respondents 41.1% spend less than Rs. 250/- per month, 35% spend between Rs. 250/- and Rs. 500/- per month, 14.1% spend between Rs. 500/- -Rs. 750/- per month, 4.3% spend between Rs. 750/- to Rs. 1,000/- per month and 5.5% spend more than Rs. 1000/- on Mobile services

It is assumed that service plan adopted by Mobile Value Added Services customers has no significant effect on perceptions towards service quality dimension. The weighted average mean values of eight service dimensions for each plan is given in the following table.

An independent T-test was conducted to test consumer perception towards service quality dimensions in prepaid and post paid conditions.

The results are discussed as follows.

Post paid consumers average is higher ( $m=3.4010$ , Standard deviation is 0.5433) compared to prepaid consumers average lesser ( $m=3.3529$ , Standard deviation = 0.5303). But according to T-test,  $t(509) = -0.598$ ,  $p=0.550$ . These results imply that service plan does not have an effect on the reliability in MVAS.

The perception towards Network Quality in MVAS in respect of Post paid consumers average is higher ( $m=3.5139$ , Standard deviation = 0.7130) compared to prepaid consumers average is lesser ( $m=3.4374$ , Standard deviation = 0.7076). But according to T-test,  $t(509) = -0.713$ ,  $p=0.476$ . These results imply that service plan does not have an effect on reliability in MVAS.

The perception towards responsiveness in MVAS in respect of Pre paid consumers average is higher ( $m=3.1911$ , Standard deviation = 0.9790) compared to post paid consumers average is lesser ( $m=3.1875$ , Standard deviation = 1.0191). But according to T-test,  $t(509) = -0.024$ ,  $p=0.980$ . These results shows that service plan does not have an effect on reliability in MVAS.

The perception towards assurance in MVAS in respect of Prepaid consumers average is higher ( $m=3.4507$ , Standard deviation = 0.7404) compared to Post paid consumers average is lesser ( $m=3.5069$ , Standard deviation = 0.7112). But according to T-test,  $t(509) = -0.503$ ,  $p=0.615$ . These results suggest that service plan does not have an impact on reliability in MVAS.

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<b>Group Statistics</b>				
Dimensions	PLAN	N	Mean	Std. Deviation
1. Reliability	Prepaid	463	3.3529	.53025
	Postpaid	48	3.4010	.54331
2. Network Quality	Prepaid	463	3.4374	.70756
	Postpaid	48	3.5139	.71030
3. Responsiveness	Prepaid	463	3.1911	.97904
	Postpaid	48	3.1875	1.01910
4. Assurance	Prepaid	463	3.4507	.74044
	Postpaid	48	3.5069	.71124
5. Empathy	Prepaid	463	3.2392	.71766
	Postpaid	48	3.2812	.73590
6. Tangibility	Prepaid	463	3.2952	.71790
	Postpaid	48	3.2222	.71899
7. Convenience	Prepaid	463	3.5022	.69006
	Postpaid	48	3.5260	.75660
8. Content Quality	Prepaid	463	3.3749	.61853
	Postpaid	48	3.2917	.61604

The perception towards empathy in MVAS in respect of Pre paid consumers average is higher ( $m=3.2392$ , Standard deviation =  $0.7177$ ) compared to Post paid consumers average is lesser ( $m=3.2812$ , Standard deviation =  $0.7359$ ). But according to T-test,  $t(509) = -0.385$ ,  $p=0.700$ . These results tells that service plan does not have an impact on reliability in MVAS.

The perception towards tangibility in MVAS in respect of Pre paid consumers averaged higher ( $m=3.2952$ , Standard deviation =  $0.7179$ ) compared to Post paid consumers average lesser ( $m=3.2222$ , Standard deviation =  $0.7190$ ). But according to T-test, they are  $t(509) = -0.670$ ,  $p=0.503$ . These results imply that service plan does not have an influence on reliability in MVAS.

The perception towards convenience in MVAS in respect of Post paid consumers average is higher ( $m=3.5260$ , Standard deviation =  $0.7566$ ) compared to prepaid consumers average is lesser ( $m=3.5022$ , Standard deviation =  $0.6901$ ). But according to T-test,  $t(509) = -0.226$ ,  $p=0.821$ . These results connotes that service plan does not have an impact on reliability in MVAS.

The perception towards content quality in MVAS in respect of Pre paid consumers averaged higher ( $m=3.3749$ , Standard deviation =  $0.6185$ ) compared to Post paid consumers average lesser ( $m=3.2917$ , Standard deviation =  $0.6160$ ). But according to

T-test, they are  $t(509) = -0.888, p=0.375$ . These results suggests that service plan does not have an impact on reliability in MVAS.

It is evident from post hoc test except for responsiveness there is no significant difference towards remaining characteristics for both prepaid and post paid customers.

Dimension		Levene's Test for Equality of Variances				
		F	Sig.	t	df	SIG)
1. Reliability	Equal variances are assumed	.236	.627	-.598	509	.550
	Equal variances are not assumed			-.586	56.684	.560
2. Network Quality	Equal variances are assumed	.006	.940	-.713	509	.476
	Equal variances are not assumed			-.711	57.106	.480
3. Responsiveness	Equal variances are assumed	.101	.751	.024	509	.980
	Equal variances are not assumed			.024	56.372	.981
4. Assurance	Equal variances are assumed	.105	.746	-.503	509	.615
	Equal variances are not assumed			-.520	58.080	.605
5. Empathy	Equal variances are assumed	.013	.909	-.385	509	.700
	Equal variances are not assumed			-.378	56.669	.707
6. Tangibility	Equal variances are assumed	.001	.976	.670	509	.503
	Equal variances are not assumed			.669	57.156	.506
7. Convenience	Equal variances are assumed	.649	.421	-.226	509	.821
	Equal variances are not assumed			-.210	55.414	.835
8. Content Quality	Equal variances are assumed	.029	.865	.888	509	.375
	Equal variances are not assumed			.891	57.274	.377

It is assumed that all the eight variables chosen for study. There is no significant difference among the all service providers. To test this hypothesis T test is used. For this purpose overall mean value of eight variables are decomposed by service plan as grouping variable. The weighted average means values of eight variables for individual service providers given in the above table.

It is evident from the above table that except for responsiveness there is no significant difference among remaining characteristics for both prepaid and postpaid customers.

## 9. SUMMARY

Once the associations were evaluated, the study focused on impact of choice of service provider on perception of service quality dimensions. The rationale behind this evaluation was to verify that customers choose a service provider because they choose and evaluate the service provider on their requisite service quality dimensions. The study found the choice of service provider had no impact on the perceptions of reliability, assurance and empathy. The reason for this can be attributed to the fact, as

stated earlier, that telecom sector is a regulated market. The presence of regulatory body negates the concept of reliability, assurance and empathy. On the other hand the study found that the choice of service provider had an impact on the perception of network quality, responsibility, tangibility, convenience and content quality. Network quality depends on the traffic management and infrastructural facilities and differs from company to company. So companies with better infrastructural facilities and better traffic management have better network quality. Same is the situation with tangibility. Responsibility, convenience and content quality differ from organization to organization depending on their personnel, training and strategy.

Next impact of Service plan on perception of service quality dimensions was evaluated. The rationale behind this evaluation was to verify that customers choose a service plan because they choose and evaluate the service plan on their requisite service quality dimensions. The study found that the choice of service plan had no impact on the perceptions of any of the service quality dimensions i.e. reliability, network quality, responsibility, assurance, empathy, tangibility, convenience and content quality.

Subsequently, impact of period of technology usage on perception of service quality dimensions was evaluated. The rationale behind this evaluation was to verify that customers learn over a period of time through technology adoption and they evaluate mobile value added services on their requisite service quality dimensions. The study found that the period of tech usage had no impact on the perceptions of any of the service quality dimensions i.e. reliability, network quality, responsibility, assurance, empathy, tangibility, convenience and content quality.

Next, impact of gender on perception of service quality dimensions was evaluated. The rationale behind this evaluation was to confirm that males and females perceive similarly and they evaluate mobile value added services on service quality dimensions similarly. The study found that the period of gender had no impact on the perceptions of all of the service quality dimensions i.e. network quality, responsibility, assurance, empathy, tangibility, convenience and content quality except reliability.

Further, impact of monthly expenditure on perception of service quality dimensions was evaluated. The rationale behind this evaluation was to verify that customers incur expenditure every month on the value added services and they evaluate mobile value added services on their requisite service quality dimensions. The study found that the monthly expenditure had no impact on the perceptions of all of the service quality dimensions i.e. reliability, network quality, responsibility, assurance, empathy, tangibility and content quality except convenience.

Next, the study explored if demographic variables had any influence or impact on the perceived value of service provider, customer satisfaction, repeat purchase intention and customer loyalty. The study found that monthly expenditure, technology adoption and gender has no impact on perceived value, customer satisfaction, repeat purchase intention and customer loyalty.

However the study found that the choice of service provider has impact on perceived value, repeat purchase intention and customer loyalty. On the contrary, there was no impact of choice of service provider on customer satisfaction. The study found that the type of plan has no impact on customer satisfaction, repeat purchase intention and customer loyalty but has impact on the perceived value of the service provider.

This study's main contribution comes from the understanding of the relationship that exists between Service Quality, Perceived Value, Customer Satisfaction, Post-purchase Intention and Customer Loyalty.

The study established that of the eight dimensions of Service Quality i.e. reliability, network quality, responsibility, assurance, empathy, tangibility, convenience and content quality; content quality, network quality and responsiveness are influencing the perceived value of the mobile value added services by the consumers. This finding is important for the organizations who would like to focus on improving the perceived value by their consumers. The organizations can concentrate on the improving content quality, network quality and responsiveness.

Next, this study recognized that of the eight dimensions of Service Quality; network quality, responsibility, assurance, empathy, tangibility and content quality are influencing customer satisfaction in the mobile value added services by the consumers. This finding is important for the organizations who would like to edge on improving customer satisfaction. The organizations can concentrate on network quality, responsibility, assurance, empathy, tangibility and content quality.

Next, this study found that of the eight dimensions of Service Quality; network quality, responsibility, tangibility and content quality are impacting the post purchase intention of the customers in the mobile value added services.

Network Quality and Content Quality are two most important dimensions of service quality for the Indian consumers and affect the perceived value, customer satisfaction and post purchase intention. On the other hand, Indian consumer's do not perceive Reliability and Convenience as important for perceived value, customer satisfaction and post purchase intention. This research regurgitates the findings of many service quality studies in Indian scenario, that reliability and convenience are not perceived as important within the service quality construct.

The study found that Perceived value impacts customer satisfaction and post purchase intention. This reiterates the findings of many service quality studies that a positive perceived value will result in high customer satisfaction and positive post purchase intention.

## **10. LIMITATIONS AND FUTURE RESEARCH:**

The study was conducted in rural markets of Prakasam district. It would be useful to include other districts and states in a future study and further investigation of the relationship between service quality dimensions and cultural dimensions may be undertaken, especially given that India is a vast country with a population of more than 1.2 billion (approx.), 117 officially recognized languages, 28 states and 7 union territories

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