An Empirical Study of Electronic Service Quality in Online Purchase: Role of Demographic Differences

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This article focuses on studying the various dimensions of electronic service quality (E-SQ) and the customer's perception towards these dimensions in online purchase. Additionally it also aims at examining the effect of the various demographic variables over the customer's perceived E- service quality in online purchase. Primary Data was collected through self-administered questionnaire from the sample drawn from the population of Jaipur City of Rajasthan, using internet to purchase. The constructs were developed using the measurement scales taken from the previous studies in the same area. Data was analysed using SPSS 16. The results shows the significant differences were found in e-service quality dimensions across the different demographic variable i.e. age, income, gender, occupation and internet usages per day at the various features of different e-service quality dimensions.

Keywords: Internet, E-service Quality, Demographics, Online Shopping

Introduction

With the rapid development in the field of technology and communication, Internet has been playing a vital role in every sphere of life as it not only makes the tasks easier but also saves lot of time. Internet uses have been increasing with a high rate over the past few years for the purpose of communication with people, learning process, financial transaction, purchasing etc. According to AssochamIncreasing internet and mobile penetration, wide acceptability of online payments and favorable demographics has provided the e-commerce sector in India the distinctive opportunity to companies connect with their customers (Assocham.org). The e-commerce industry in the country is expected to be of worth USD 38 billion by 2016, a 67 per cent jump over the USD 23 billion revenues for 2015 (indotemplate.com). The most well-known form of e-commerce or electronic commerce is online shopping, also known as business to consumer e-commerce (B2C), where private customers can order various products which they then receive by courier or postal mail. By the year 2015, the retail e-commerce sales as a percent of total retail sales in India are set to account for 0.9 percent of all retail sales in India(census.govchart.com),

With the growing trends of research in the field of internet marketing and e- commerce, service quality in context of online environments has become a crucial factor in determining the success and failure of E- commerce (Yang & Jun, 2008). Further, it has recently evolved as a new developing area in the field of research which is aimed to address the customers in the electronic marketplace.According to Parasuraman et al. (1988), the intense competition between the service firms have led them to find for the profitable ways to differentiate themselves as compared to others. A key approach which enables businesses to differentiate with others is the quality of service provided by them (Thompson et al., 1985).According to Yang, 2001; Zeithaml, 2002, The online retailers have begun to realise that the key determinant for the success and failure are not only the website presence and lower prices but it also includes electronic- service quality (E-service quality). The role of service in an online environment is defined as E-service (Rust & Lemon, 2001). Following on, the concept of e-service quality may thus be defined as the consumers' overall evaluation and judgment of the delivery of service in a virtual marketplace (Santos, 2003). According to Zeithaml (2002) e-service quality is the extent to which a Web site facilitates efficient and effective shopping, purchasing and delivery. Jose&Ainhize, 2009 believe that E-service quality is an essential tool for the success of electronic channels.Service quality provides a strategic advantage for business to gain over the competition. The measurement of service quality poses many challenges because of the unique nature of services unlike the physical goods

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(Parasuraman et al., 1985). It has become essential for the companies to understand how customers perceive and evaluate online services to deliver better service quality.

With the aim of understanding the importance of e-service quality, it is essential to develop and construct the e-service quality measurement which will help the service providers and e-tailors to improve their performance (Yang et al., 2003).A scale for measuring service quality based on how consumers perceive servicequality called as SERVQUAL was developed by Parasuramanetal. (1988) and (1991).Heim and Field (2007) stats that most of the studies in the field of e-service quality have identified the dimensions of the construct either from customer's or provider's point of view.In 2000, Zeithaml. Parasuraman, and Malhotra's (2000) study identified a many website features at the perceptual-attribute level and categorized them into 11 e-SQ dimensions: Reliability; Responsiveness; Access; Flexibility; Ease of navigation; Efficiency; Assurance/trust; Security/ privacy; Price knowledge; Site aesthetics; and Customization/ personalization. Based on the items of this previous study.

This study is aimed at studying the various dimensions affecting e- service quality in online shopping and to study the consumer's perception towards these dimensions. Additionally it also focusses on finding out the perceptual differences across the demographic variables such as age, income, gender etc.

Aim of Current Research

1) To study the various dimensions of Electronic- Service Quality in online Purchase

2) To study the consumer's perception towards the E-service quality dimensions

3) To examine the impact of demographic variables on customer's perceived e-service quality

Literature Review

The growth of internet has emerged the concept of "e-services" (Mary and O'Loughlin, 2008). According to Jamie & Aron, 2010, e-services have now commonly known as the key determinant for success of any business in electronic marketplace. Past few decades has shown the significant development in the field of service quality theories (Brady and Cronin, 2001; Dabholkar et al., 1996; Dabholkar et al., 2000; Dagger et al., 2007; Rust and Oliver, 1994).

Service quality is defined as the difference between expected service and perceived service from companies (Zeithaml, 1998). If the performance of the services are meeting or exceeding the customer's expectations the quality of services are considered to be high and on the other hand if the performance is not meeting the expectation then the quality of services are poor. Therefore in terms of measuring the quality of services, customer's expectation plays a vital role to evaluate the service quality. Asubonteng et al. (1996) states that as the service quality increases satisfaction with the service and intentions to reuse the service will increase.Parasuraman et.al. (2005)states that e-SQ is definedlargely to involve all phases of a customer's contactswith aWeb site. Ruyter et al. (2001, p. 2) defines e-service as internet-based customer service, driven by the customer with the goal of establishing customer-service provider relationships". According to Boyer et al. (2002, p. 175), e-services can be defined as: "all interactive services that are delivered on the internet using advanced telecommunications, information, and multimedia technologies

Few researches have recently attempted to identify the key elements of service quality that best fit the online business environment. Zeithaml et al. (2000) identified and categorized such key attributes into 11 dimensions-reliability, ease of navigation, responsiveness, flexibility, access, efficiency, assurance / trust, security/privacy, price knowledge, site aesthetics and customization / personalization.Yoo and Donthu (2001) developed a nine-item SITEQUAL scale for measuring website quality on four dimensions-ease of use, aesthetic design, processing speed, and security. Further, Barnes and Vidgen (2001) proposed five dimensions, which are visibility, design, information, trust and empathy. Wolfinbarge and Gilly (2003) developed a 14-item scale, eTailQ. Their scale contains four factors: website design, reliability/fulfillment, and privacy/security and customer service. However, according to Parasuraman et al. (2005), the above-stated three measurements do not constitute a comprehensive assessment of online service quality. Therefore, the present study uses the key dimensions of Zeithaml et al. (2000) to measure the service quality perceived by online purchasers.

The relative role and importance of these identified dimensions vary in terms of the perception of the customers towards it. Which means that all the dimensions are not having the same effect on the overall service quality perceived by the customers. For example, Wolfinbarge and Gilly (2003) found that reliability is the most important factor in determining customers' overall service quality perceptions, followed by website design, customer service and security/privacy. Sohn (2000) indicated that trustworthiness, ease of use, context of websites, reliability and speed of delivery are the most important dimensions of service qualityperceived by customers. As for Yang and Jun (2002), personalization and access factors are the most important factors that determine online buyers' perception of overall service quality.

Further past records reveals that in the year of 2015, the highest growth rate was recorded in apparel which is almost 69.5 percent over the last year, followed by electronic items by 62 percent, baby care products at 53 percent, beauty and personal care products at 52 percent and home furnishing at 49 percent. Among the above age segment 18-25 years of age group has been the fastest growing age segment online user growth being contributed by both male and female segment. The survey revealed that 38 per cent of regular shoppers are in 18-25 age group, 52 per cent in 26-35, 8 per cent in 36-45 and 2 per cent in the age group of 45-60. Almost 65 per cent of online shoppers are male as against 35 per cent female.

According to Farag et al. (2003), mazority of online purchasers are male. Additionally, Bhatnagar and Ghose (2004) have investigated that women tend to have lower level of computer aptitude than men. In contrast to that, Dai (2007) recorded that women are more tend to shop online and make expenditure as compared to men. Age affects the attitude the most. As a result tendencies towards online buying differ across the different age (Hwang et al., 2006). Farag et al. (2003) reported age is inversely related to online purchasing which has been supported by Ghose (2004) and Beneke et al. (2010). But there are studies reporting conflicting results. Saarenpääand Tarja (2005) pointed that 57% of the consumers of e-commerce were 30-years-old or older. National Telecommunications and Information Administration (NTIA) indicates that income is associated with Internet usage (Lightner et al., 2002). Additionally, individuals with a higher income shop online more often (Sim &Koi,

2002). Sim and Koi (2002), established that Internet experience and usage frequency have an impact on the use of Internet for purchasing. Therefore, the level of Internet usage can be taken as one of the indicators of online purchasing (Thomson &Laing, 2003; the level of Internet usage is as one of the indicators of online buying (Thomson &Laing, 2003; Bhatnagar and Ghose (2004). Furthermore, Tigre and Dedrick (2004) stated that the growth and usage of the Internet appear to be different in both regionally and demographically.

Based upon the literature collected it was found that the consumer differs in terms of their online purchase attitude while shopping over the internet. The past studies reveal the various patterns in the consumer's perception across their demographic variables i.e. age, gender, income, education etc. and their impact over the consumer's perception towards the various e-service quality dimensions. Based on the past studies the following hypotheses are being formed.

H1: Online purchase perception significantly differ across the gender

H2: Online purchase perception significantly differ across occupation

H3: Online purchase perception significantly differ across the age

H4: Online purchase perception significantly differ across the income

H5: Online purchase perception significantly differ across the internet usages per day

Research Methodology

The major purpose of the investigation was to explore the differences based on the various demographic variables which affect consumer's perception towards various electronic service quality dimensions. For that purpose, a descriptive study was conducted to examine that how individual's perception differs across their demographic variables i.e. age, gender, income, level of education etc. towards the various electronic service quality dimensions. The purpose of descriptive study is to describe the market characteristics. The participants in the study consists of residents of Jaipur city, Rajasthan having a sample of 100 individuals with online purchase experience. The convenience sampling method was used due to cost and time constraints. The respondents were selected because they happen to be in the right place at the right time.

There were 42 (42 per cent) female and 58 (58 per cent) male. Out of which 43 percent were in the age of 18–25, 33 percent in the age group of between 25 - 35, 15 percent in the age group of 35-45 and remaining 7 percent were in the age of 45-50 and 50 above. Further, talking about income majority of them fall in the income group of 20,000 – 40,000 with 30 percent followed by 24 percent in 40,000 to 60,000, 18 percent in 60,000 to 80,000 and 10 percent in 80,000 to 1,00,000. Additionally internet usages per day were highest in 36 percent with 2 to 3 hours a day followed by 32 percent in 1 to 2 hours a day, 15 percent in 3- 4 hours a day, 12 percent in less than 1 hour and 15 percent with more than 4 hours a day.40 percent of the total were found to be student by profession followed by 32 percent of professionals, 20 percent private employees and remaining 8 percent of government employees.

The summary of the sample characteristics shown in table (1).

Table- 1: Sample characteristics

Variable		Frequency	%
Gender	Male	58	58
	Female	42	42
Age	Less than 18	2	2
	18-25	43	43
	25-35	33	33
	35-45	15	15
	45-55	5	5
	55 and above	2	2
Income	Less than 20,000	15	15
	20,000-40,000	30	30
	40,000- 60,000	24	24
	60,000 – 80,000	18	18
	80,000 – 1,00,000	10	10
	1,00,000 and above	03	03
Internet Usage	Less than 1 hour	12	12
	1 -2 hours	32	32
	2-3 hours	36	36
	3 – 4 hours	15	15
	More than 4 hours	05	05
Occupation	Government	08	08
	Students	40	40
	Private	20	20
	Professional	32	32

The questionnaire was used as an instrument for gathering the data about the perception of online shoppers.

Data Analysis and Interpretations

The study included different independent variables i.e. Gender, Age, Income, Occupation and internet usages per day etc., for which the sample of 100 was selected from the population and questionnaire were distributed amoung all of them. On the other side the various dimensions of e-service quality were studied as dependent variables i.e. website design, payment options, security, reliability and post/prior purchase experience)

The scales for examining the impact of various e- service quality dimensions were used based on the literature across the different demographic variables. The questionnaire used the service quality dimensions given by Zeithaml. Parasuraman, and Malhotra's (2000) including different quality features i.e. Website design (user friendliness, adequate search options and product ass9rtments), Payment option (cash on delivery, net banking and debit/credit card), product options (product quality, offers and discounts and product pricing), Security (Id and password security, physical safety, financial security, confidentiality), Reliability (safe and timely delivery, accurate presentation of the products, products with guarantees and warrantees, presence of reputed couriers), Assurance (honesty and trustworthiness, Politeness, respect and friendliness shown and required skills, knowledge and information of the service personals) and prior/post purchase experience (satisfaction with the past online purchase, good return policy and correct refund of returned products). The items were scored on a 5 pointer's Likert scale ("Very important," "Important," "Somewhat important," "Not important," and "Not at all important").

Analysis of variance (ANOVA) was used to analyse the data as it deals with cause and effect relationship in association of attributes and allows us to find out the association between two or more variables. ANOVA was run on SPSS 16.0 software.In the study this test has been applied to examine the significant differences in various e-service quality dimensions across the demographic variables i.e. age, gender, income, occupation and internet usages per day etc.

Hypotheses Testing

The study includes hypotheses, predicting the differences in perception towards e- service quality

dimensions across the different demographic variables i.e. age, gender, occupation, income, internet usages per day etc. Table 2 gives the output for the hypotheses tests which indicates that there are significant differences were found in some of the e-service quality dimensions whereas some others do not hold any significant difference across the different demographic variables i.e. age, gender, income, occupation and internet usages per day etc. The table gives the p- value for the different univariate tests.

The results for the hypothesis H1 showed that since the p value for some of the dimensions i.e. payment options, product options and post/ prior purchase experience wasless than 0.05 which shows the significant differences across the gender which does not support the hypothesis whereas dimensions on which no significant differences were found across the gender are website design, security and reliability which has the p value more than 0.05 which support the hypothesis. Hypothesis H2 was supported by the dimensions like website design and security which has p value more than 0.05, but on the contrary the remaining service quality dimensions like payment options, product options, reliability and post/prior purchase experience, do not support the hypothesis as some significant differences were found across the occupation having p value less than 0.05. Further, results support the hypothesis H3 with respect to some of the dimensions i.e. product options, reliability and post/prior purchase experience having p value more than 0.05, but on the other, remaining dimensions do not support the hypothesis with respect to the dimensions like website design, payment options and security and shows the significant differences across the age. Further, taking income as a variable the hypothesis H4 is supported by the dimension like website design, security and prior/post purchase experience which do not show any significant differences, but the remaining dimensions like payment options, products options and reliability pose the significant differences across the level of income and do not support the hypothesis. Hypothesis H5is supported by the dimensions like product options, reliability and prior/post purchase experience etc. but the remaining dimensions do not hold well with the hypothesis and show significant differences across the internet usages per day.

Conclusion and Future Research

This article focuses on studying the perceptual differences in electronic service quality dimensions across the different demographic variables i.e. age, gender, income, occupation and internet usages etc. and to find out the significant differences upon the various dimensions. The dimension included Website design, payment options, products options, security, reliability, assurance and prior/post purchase experience given by Zeithaml. Parasuraman, and Malhotra's (2000).

As predicted by the different hypotheses, it was found that the differences in the perception towards e-service quality dimensions were largely affected by the demographic profile of the individuals resulting into the significant differences in their perception towards e-service quality in online purchase. According to the results, gender differences play a very significant role in individual's perceptual differences towards e-service quality dimensions like payment option, product option and post/prior purchase experience. The results showed that females tend to prefer cash on delivery over other modes of payment and males prefer payment through net banking over the other modes. Further females were found to be more price sensitive as compared to men and look for more offers and discount as compared to men. Additionally females tend to consider their past online purchase experience more than males for online purchasing. But both of them were found to be almost equal in terms of the various features of website design, security and reliability etc. as both males and females prefer security and reliability features in their online purchase.

Further, occupation also plays a significant role in individual's perception towards e-service quality dimensions like payment options, product options reliability and prior/ post purchase experience. The results shows that students and government employees tend to prefer cash on delivery more than the private and professional individuals, on the contrary private and professional individuals prefer net banking more than other as payment option. Further, students were found to be more sensitive towards the product price, offers and discounts as compared to the others. Additionallythe students and the government employees tend to consider their past experience more than others while shopping over the internet. But in terms of website design and security no differences were found as

Table 2: Service quality and Demographics (ANOVA Results)

Service Quality		Gender				Occupation				Age			
		Df	MS	F	Sig.	Df	Mean Square	F	Sig	Df	Mean Square	F	Sig
Website Design	User friendly	2	1.50	2.50	0.09	2	0.23	0.38	0.69	2	7.93	3.48	0.04
	Adequate search option	2	1.36	2.26	0.11	2	0.23	0.38	0.69	2	1.36	2.26	0.11
	Product assortment	2	0.54	0.89	0.42	2	0.49	0.81	0.45	2	0.54	0.89	0.42
Payment Option	Cash on delivery	2	7.93	3.48	0.04	2	7.93	3.48	0.04	2	2.29	3.39	0.04
	Net Banking	2	1.69	3.85	0.03	2	1.69	3.85	0.03	2	2.42	4.55	0.01
	Debit/ credit card	2	0.12	0.46	0.63	2	0.07	0.15	0.86	2	2.61	4.91	0.01
Product Option	Product quality	3	0.10	0.43	0.73	3	0.17	0.27	0.85	3	0.25	0.31	0.82
	Offers & Discounts/warranty	2	2.29	3.39	0.04	2	2.61	4.91	0.01	2	0.14	0.18	0.84
	Product Price	2	2.61	4.91	0.01	2	2.43	4.35	0.02	2	0.71	0.89	0.42
Security	Id & password safety	3	0.33	1.17	0.33	3	0.35	0.57	0.64	2	2.29	3.39	0.04
	Physical safety of the product	2	0.08	0.29	0.75	2	0.05	0.08	0.93	2	0.27	0.40	0.67
	Risk of financial security	2	0.20	0.69	0.51	2	0.33	0.54	0.59	2	2.29	3.39	0.04
	Confidentiality	2	0.09	0.30	0.74	2	0.06	0.10	0.91	2	0.78	1.16	0.32
Reliability	Safe and timely delivery of the products	2	0.22	0.92	0.40	2	1.46	2.61	0.04	2	0.03	0.04	0.96
	Accurate representation of the products	2	0.11	0.45	0.64	2	0.35	0.62	0.54	2	0.11	0.16	0.85
	Products with guarantees and warrenty	2	0.12	0.48	0.62	2	2.43	4.35	0.02	2	0.40	0.60	0.55
	Presense of reputed couriers	2	0.06	0.23	0.80	2	0.06	0.10	0.91	2	0.40	0.60	0.55
	Satisfaction with the past online purchase	2	1.46	2.61	0.04	3	1.09	2.70	0.04	3	0.14	0.19	0.90
Prior / Post purchase experience	Good return policy	2	0.64	3.15	0.05	2	2.30	5.72	0.01	2	0.41	0.56	0.58
	Correct refund of returned products	2	0.16	0.79	0.46	2	5.88	14.62	0.00	2	0.66	0.91	0.41

security, website user-friendliness are web site features are very essential feature required by the individuals of different profession. Further the differences in age groups also affected individuals perception towards payment options and security as the individuals lying in lesser age group tend to be more comfortable with making payment through net banking and other electronic means of payment. But as the age group increases people found to be more comfortable with paying cash on delivery as a result of lack of technical expertise. Additionally individuals with higher age group were found to be more conscious and feel unsecure to transact over the internet and tend to have fear of financial security as compared to the individuals in lesser age group. But on the dimension like website design, product option, reliability etc. no significant differences were found.

The income has played a significant differences in e- service quality dimensions like payment option, product option and reliability. As per the results, individuals with higher income were found to be less sensitive about the product price, offers & discounts, guarantees etc. as compared to the individuals with less income. But on the other dimensions like website design, security and prior

Table 3- Service quality and Demographics (ANOVA Results)

Service Quality		Income				Occupation			
		Df	MS	F	Sig.	Df	Mean Square	F	Sig
	User friendly	2	1.437	0.595	0.555	2	2.3	5.722	0.005
Website Design	Adequate search option	2	0.119	0.049	0.952	3	1.087	2.704	0.043
	Product assortment	2	1.293	0.535	0.588	2	0.99	0.462	0.632
Payment Option	Cash on delivery	2	7.929	3.481	0.037	2	5.878	14.622	0
	Net Banking	2	2.287	3.393	0.042	2	5.878	14.622	0
	Debit/ credit card	2	0.785	0.345	0.71	2	3.874	1.759	0.181
	Product quality	2	1.803	2.692	0.047	3	1.749	0.825	0.486
Product Option	Offers & Discounts/warranty	2	1.692	3.854	0.027	2	2.244	1.058	0.354
	Product Price	2	1.692	3.854	0.027	2	1.962	0.925	0.402
	Id & password safety	3	2.375	0.921	0.438	3	2.019	0.966	0.417
	Physical safety of the product	2	0.228	0.088	0.915	2	2.169	1.038	0.362
Security	Risk of financial security	2	1.546	0.6	0.553	2	2.431	4.347	0.018
	Confidentiality	2	4.972	1.929	0.157	2	0.493	0.236	0.791
Reliability	Safe and timely delivery of the products	2	0.311	0.117	0.89	2	0.86	0.438	0.648
	Accurate representation of the products	2	7.831	2.932	0.049	2	0.11	0.056	0.946
	Products with guarantees and warrenty	2	2.3	5.722	0.005	2	5.166	2.631	0.081
	Presense of reputed couriers	2	0.549	0.206	0.815	2	1.211	0.617	0.544
	Satisfaction with the past online purchase	3	2.045	0.955	0.42	2	1.472	0.686	0.508
	Good return policy	2	0.121	0.056	0.945	2	1.64	0.764	0.47
Prior / Post purchase experience	Correct refund of returned products	2	3.508	1.638	0.203	2	0.018	0.009	0.992

purchase experience, no differences were found as these features are essential for all income groups. At last the role of internet usages per day also has shown the significant differences in terms of website user-friendliness, search options, net banking, and financial security. As the individual who uses internet more has shown more interest towards security and other features as compared to the individuals using internet less. But no further differences were found in terms of product option, reliability etc.

The direction for the future research would be to examine the effect of all electronic service quality dimensions across the other demographic variables as well also like religion, location etc. Additionally this study does not cover all the e-service quality dimensions in detail because of the scarcity of time and resources, so there is a scope for the further research on the same aspect taking other dimensions which have not been discussed in the study. Further this study focusses on the population of Jaipur City (Rajasthan) but the same study could be conducted with some other and large population that may result into more precise findings about the study which could help in developing some theories about the study.

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