OPEN ACCESS

Saudi Journal of Business and Management Studies
Abbreviated Key Title: Saudi J Bus Manag Stud
ISSN 2415-6663 (Print) |ISSN 2415-6671 (Online)
Scholars Middle East Publishers, Dubai, United Arab Emirates
Journal homepage: https://saudijournals.com

Original Research Article

# Electronic Service Quality (E-SQ) and Perceived Value: Moderating Role of Demographics

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**DOI:** 10.36348/sjbms.2021.v06i06.002 | **Received:** 26.04.2021 | **Accepted:** 05.06.2021 | **Published:** 11.06.2021

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## Abstract

The aim of the paper is to measure the moderating role of gender, age and Family Income between e-SQ of e-shops and Perceived value using e-SQ scale in online shopping. Data were collected from 412e-shoppersfrom all over the India. Statistical techniques such as PROCESS Procedure for SPSS Version 3.4 Macro by Andrew F. Hayes-2018 for moderation bootstrapping test was used to analyze the data. It is resulted from the research findings that the interaction effect of gender, age and income between the relationships of e-SQ and Perceived Value was significant and positive. Examination of all the interaction plots such as gender, age and Family Income also showed an enhancing effect of e-SQ on perceived value with the moderation of demographics of the customer.

**Keywords:** E-commerce, e-SQ, Perceived Value, Moderation.



## INTRODUCTION

Retail landscape has undergone a considerable transformation like other industries with the development of science and technology and internet facility in the world as well as in India. Number of digital buyers keeps multiplying every year. In the year 2019, an estimated 1.92 billion people bought goods and services through online and the E retail sales surpassed 3.5 trillion US dollars worldwide. The E retail sales are accounted for 14.1 percent of all retail sales worldwide. But, India, the second-largest populated country in the world after China, is said to be back-warded in adopting online business when compared to the countries like USA, France, and China, etc. In India, only 50% of the total population is using internet. In the case of the USA, it is around 90 percent of the country's population. In France, about 81 percent of the population and in china 58 percent of the population is using the internet facility. Around 330 million people are buying through online in the entire Indian population, this comes to 25 to 30 percent in Indian population and Poor service quality in online business might be one of the reasons for it.

Service quality is one of the most important driving forces, in addition to technology and consumer education, ofe-businesses to achieve their goals in the retailing business, without which the business organizations may not be able to succeed in today's global and competitive business environment. (Kabir and Carlsson, 2010), opined that service quality is a linked with customer perceptions and expectations and is essential for generating satisfaction in the minds of customer or consumer. Good service can prompt customers to spend more than they had planned. Satisfied customers are more likely to buy again. Customer satisfaction is the ultimate result of meeting a consumer's expectation from the performance of products as well as service rendered by the storekeeper.

Most satisfied customers normally have the intention to re-purchase the products if product performance and service meets his or her expectation (Alam and Yasin, 2010), and the same trend can be observed in case of online retailing too. Service quality is one of the important aspects to attract customers in either online or offline retail business. Perceived service quality in online retailing influences customer satisfaction and purchase intentions.

The perceived value also play very important role to satisfy the customers. In order to know the

service value in the online marketplace, online stores need to provide the expected quality in service. It is important for online stores to provide basic services like Ease of accessing the website (Efficiency), Promised order delivery by online stores (Fulfillment). Active functioning of the site (System availability), Facilitate safe and security for the customer information (Privacy) to increase online shopper perceived value.

Service value, in any service organization especially in E-commerce, acts as an impediment as well as impetus for the growth and development of the online business. Failure in providing expected service to the customer leads to poor perceived value and customer satisfaction which in turn affect the online sales. Hence, there is a need to find the influence of demographics on perceived value and reasons for enhancing the perceived value under the influence of moderator's between the e-SQ and perceived value in e-shopping.

## LITERATURE REVIEW

### Electronic Service quality

Service quality became significant when the business people apprehended that the quality of a product only is not satisfying the customer to gain competitive advantage and providing a qualitative service would add the value. But, deriving a standard quality concept for service is thorny because of its nature and characteristics. Quality of Service is depended on the perceptual tendency of the customer (Kucukaltan, 2007). The same service can be perceived by different customers in different ways, some may receive it as high and some other as low. Service quality generally be evaluated by the customers based on the direction and magnitude of differences and expectations among them (Zeithaml&Bitner, 2000). (Edvardsson, 1998), opined that service quality is the degree of being able to meet the customers' expectations and to determine their needs and wants. Teas (1993) defined service quality as the comparison of performance with ideal standards. Somebody stated that service would come in to picture when the organizations supply goods and the customers are the right persons to define the service. As per (Richard et al., 2009), quality is the satisfaction of customer expectations. Major contribution for service quality is derived from(Parasuraman et al.,1985), expressed that quality of service comes from the comparison of expected service and the perceived service performance and they also developed a scale 'SERVQUAL' to measure the quality of service. Due to its sturdy impact on performance of the business, lower coat and customer satisfaction, the model developed by Parasuraman, and Zeithaml has got wider acceptance and used by number of practitioners, Mangers and researchers(Nitin and Deshmukh, 2005). Various service industries like banks, healthcare, telecommunications, retailing, information systems, libraries, etc., have been practicing the SERVQUAL model.

### Customer perceived value

Purchasing patterns of the customers depended on the value they give to the products or services and influence the buying behavior of the consumers (Ilias et al., 2012). There are rational differences between what the customers is expecting and what He/she get after having bought. The value offered to the customer is the difference between total customer value and total customer cost. In the views of Zeithaml (Zeithaml,1988), customervalueis "the consumers' overall evaluation of a product based on their perceptions".(Cravens and Piercy, 2003) opined that perceived value consists of benefits and costs resulting from the purchase and use of products. (Keller, 1998) believed that "consumers combine perception of quality with perception of cost in order to reach to an assessment of perceived value". In the words of (Holbrook, 1996). Perceived value is strongly related to the utility or benefits the customer get return for the money or any other cost they spent including both cognitive and affective aspect.

## OBJECTIVES OF THE STUDY

1. To measure the effect of e-shops' Overall Service-Quality (e-SQ) on the Perceived Value of online shoppers
2. To study the Moderating effect of Gender, Age and Income of the respondents between e-SQ and Perceived Value.

## HYPOTHESES

$H_1$: Gender moderates the relationship between e-SQ and perceived value of the e-Shoppers

$H_2$: Age moderates the relationship between e-SQ and perceived value of the e-shoppers.

$H_3$: Family income moderates the relationship between e-SQ and perceived value of the e-shoppers.

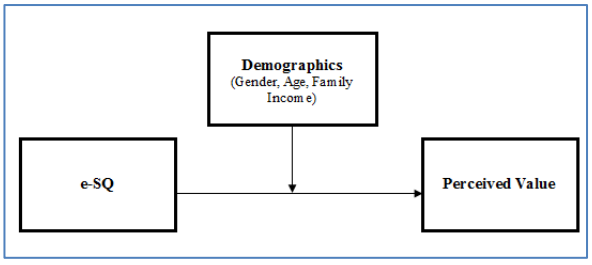


**Fig-1: Conceptual Framework**

## RESEARCH METHODS

The present study focuses on interacting effect of demographics between e-SQ & perceived value of the e-shoppers in India. With the interaction of demographic conditions such as gender, age and incomes of the customers the perceived values may be influenced. To test this interaction effect Model 1 of Andrew F. Hayes has been used. For the purpose of the study, data has been collected from the online shoppers, by following the snowball sampling technique, who purchase products from the Flipkart, Amazon,

Snapdeal, Shopclues, Paytmmall, Myntra, Yebhi, Homeshop18, Firstcry, and Shopping.rediff as these platforms occupied a major chunk in the online market. The scale developed by (Parasuraman et al., 2005) for e-service quality and perceived value is used for analysis. Sample size has been finalized by applying the Cochran's (1963) sample size formula as the population is unknown. The resulted sample size, as per the formula, is 384. But, 1500 questionnaires were e-mailed through Google form link to a comprehensive database and shared in different social media like Facebook, Twitter and Whatsapp to cover the target respondents who experienced the online services. About 450 questionnaires were returned back and 412 questionnaires were found satisfactory and 38 were rejected. Hence, the data has been collected from 412 respondents. Likert five-point Scale starting from Strongly Disagree to Strongly Agree for e-service quality and for Perceived value, the scale ranging from Very Poor to Very Excellent was used.

## RESULTS AND DISCUSSION

In the present study, the relationship and strength between the variables e-service quality Perceived Value is assessed by following the Hayesmodel for moderation. To test this interaction effect, Model 1 of Andrew F. Hayes, (2018) has been used. Demographics of the customer such as Gender, Age and Income are considered as theses are significant factors which possibly moderate the relationship between e-service quality and perceived value of the customer.

### Interaction Effect of Gender

**Table-1: Model 1**

| **Y: PVX: e-SQ W: Gender** |
|---|
| Sample Size: 412 |

**Outcome Variable: PV**

| **Model Summary** | | | | | | |
|---|---|---|---|---|---|---|
| R | R-sq | MSE | F | df1 | df2 | p |
| 8210 | .6740 | .1579 | 281.1856 | 3.0000 | 408.0000 | .0000 |

**Model**

| **Coeffse** | **t** | **p** | **LLCI** | **ULCI** |
|---|---|---|---|---|
| Constant -1.6667 | .2533 -6.5800 | 0000 | -2.1646 | -1.1688 |
| e-SQ 1.2436 | .081815. 2073 | .0000 | 1.0828 | 1.4044 |
| Gender -1.4239 | .3534 -4.0286 | 0001 | -2.1186 | -.7291 |
| Int_1.4973 | .1114 4.4631 | .0000 | .2783 | .7164 |
| Product terms key: | | | | |
| Int_1 : | e-SQ x | Gender | | |
| Test(s) of highest order unconditional interaction(s): | | | | |
| R2-chng F df1 df2 p | | | | |
| X*W .0159 19.9189 1.0000 408.0000 .0000 | | | | |

Focal predict: e-SQ (X)
Mod var: Gender (W)

**Conditional Effects of the Focal Predictor at Values of the Moderator(s)**

| **Gender** | **Effect** | **se** | **t** | **p** | **LLCI** | **ULCI** |
|---|---|---|---|---|---|---|
| 0000 | 1.2436 | 0818 | 15.2073 | .0000 | 1.0828 | 1.4044 |
| 1.0000 | 1.7409 | .0757 | 22.9995 | .0000 | 1.5921 | 1.8897 |

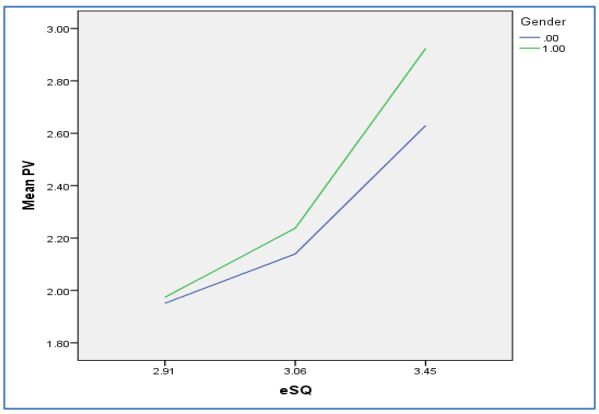


**Fig-2: Interaction Plot -1**

In the interaction effect of Gender between the relationships of e-SQ and Perceived Value,e-SQ is treated as Independent Variable; Perceived Value is treated as Dependent Variable and Gender as Interaction term or Moderating Variable. As per the results, the interaction term was positive and statistically significant (b=.4973, s.e.=.1114, p=.0000) in the model indicating that the Gender was a significant moderator between the e-SQ and Perceived value. R-square change was .0159, indicating the interaction effect accounted for 1.59% added variation in perceived value. The effect of e-SQ on Perceived value was positive and significant (b=1.2436, s.e.=.0818, p=.0000), and the effect of gender on

perceived value was negative and significant (b=-1.4239, s.e.=.3534, p<.0001). Examination of the interaction plot showed an enhancing effect as e-service quality increases perceived value of the customers but the rate of change is varied.

**Interaction Effect of Age**

**Table-2: Model 1**

| **Y: PV** | **X: e-SQ W: Age** |
|---|---|
| Sample Size: | 412 |

**Outcome Variable: PV**

| **Model Summary** | | | | | | |
|---|---|---|---|---|---|---|
| R | R-sq | MSE | F | df1 | df2 | p |
| .8585 | .7369 | .1274 | 381.0094 | 3.0000 | 408.0000 | .0000 |

**Model**

| **Coeffse** | **t** | **p** | **LLCI** | **ULCI** |
|---|---|---|---|---|
| Constant 2.2362. | 01891, 18.4495 | .0000 | 2.1990 | 2.2733 |
| e-SQ. 1066 | .0618, 17.8951 | .0000 | .9850 | 1.2281 |
| Age- .2002 | .0245 -8.1582 | .0000 | -.2484 | -.1520 |
| Int_1 | -.8843, .0828 | .0000 | -1.0470 | -.7216 |
| Product terms key: | | | | |
| Int_1 : e-SQ x Age | | | | |
| Test(s) of highest - order unconditional interaction(s): | | | | |
| R2-chng F df1 df2 p | | | | |
| X*W .0736 114.1742 1.0000 408.0000 .0000 | | | | |

Focal predict: e-SQ (X)
Mod var: Age (W)

**Conditional Effects of the Focal- Predictor at Values of the Moderator(s):**

| **Age** | **Effect** | **se** | **t** | **p** | **LLCI** | **ULCI** |
|---|---|---|---|---|---|---|
| -.6553 | 1.6861 | .0546 | 30.8661 | .0000 | 1.5787 | 1.7935 |
| .0000 | 1.1066 | .0618 | 17.8951 | .0000 | .9850 | 1.2281 |
| .7970 | .4018 | .1130 | 3.5550 | .0004 | .1796 | .6239 |

As per the results, the interaction term was negative and statistically significant (b= -.8843, s.e.=.0828, p=.0000) in the model indicating that age was a significant moderator between the e-SQ and Perceived value. However, the value-added is that it contains an index of the R-square change due to the moderation effect. The R-square change was .0736 indicating the interaction effect accounted for 7.36% added variation in perceived value. The effect of e-SQ on Perceived value was positive and significant (b=1.1066, s.e.=.0618, p=.0000), conditional on online shopper age = 0; and the effect of age on perceived value was significant (b=-.2002, s.e.=.0245, p<.0000), conditional on e-SQ = 0.

Since the interaction term in the model was statistically significant, the tests of simple slopes, which test the relationship between e-SQ (X) and perceived value(Y) at three levels of the moderator age (W), have been conducted for better interpreting the nature of moderated relationship between e-SQ and Perceived value. Conditional effects of the focal predictor at values of the moderator reveal that At -1 sd (i.e., at -.6553) on the centered age variable (representing low age), the relationship between e-SQ and Perceived value was significant (b= 1.6861, s.e.=..0546, p=.0000). Similarly, at the mean (i.e., at 0) on the centered moderator variable (representing medium age), the relationship was positive and significant (b=1.1066, s.e.=.0618, p=.0000). Finally, at +1sd (i.e., +.7970) on the centered age (represent high age, the relationship was positive and significant (b=.4018, s.e.=.1130, p=.0004).

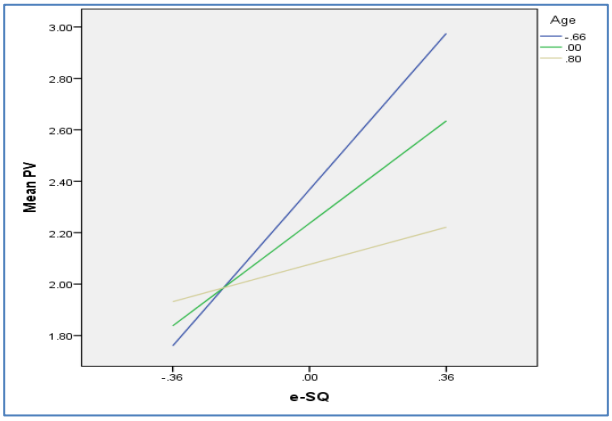


**Fig-3: Interaction Plot -2**

The interaction plot-2 represents the low, medium and high levels of e-shoppers' age towards the perceived value. It is clear that all the three levels are not parallel. Thechange in electronic service quality linearly changes the perceived value of the customers at all the age groups.

**Interaction Effect of Income**

**Table-3: Model 1**

| Y: PV | X: e-SQ W: Fincom |
|---|---|
| Sample Size: | 412 |

**Outcome Variable: PV**

| Model Summary | | | | | | |
|---|---|---|---|---|---|---|
| R | R-sq | MSE | F | df1 | df2 | p |
| .8134 | .6617 | .1639 | 266.0047 | 3.0000 | 408.0000 | .0000 |

**Model**

| Coeffse | t | p | LLCI | ULCI |
|---|---|---|---|---|
| Constant 2.2878 | .0208, 110.2474 | .0000 | 2.2470 | 2.3286 |
| e-SQ1.4310 | .0629, 22.7442 | .0000 | 1.3073 | 1.5547 |
| Fincom .0641 | .0212, 3.0231 | .0027 | .0224 | .1057 |
| Int_1.3040 | 0803, 3.7837 | .0002 | 1461 | .4620 |
| Product terms key: | | | | |
| Int_1 : e-SQ x Fincom | | | | |
| Test(s) of highest -order unconditional interaction(s): | | | | |
| R2-chng F df1 df2 p | | | | |
| X*W .0119 14.3167 1.0000 408.0000 .0002 | | | | |

Focal predict: OVSQL (X)
Mod var: Fincom (W)

**Conditional Effects of the Focal- Predictor at Values of the Moderator(S)**

| Fincom | Effect | se | t | p | LLCI | ULCI |
|---|---|---|---|---|---|---|
| -1.1017 | 1.0961 | .1294 | 8.4701 | .0000 | .8417 | 1.3505 |
| .0000 | 1.4310 | .0629 | 22.7442 | .0000 | 1.3073 | 1.5547 |
| 1.1017 | 1.7659 | .0827 | 21.3467 | .0000 | 1.6033 | 1.9286 |

The interaction term was positive and statistically significant (b= .3040, s.e.= .0803, p=.0002) in the model indicating that family income (Fincom) was a significant moderator between the e-SQ and Perceived value. However, the value-added is that it contains an index of the R-square change due to the moderation effect. The R-square change was .0119, indicating the interaction effect accounted for 1.19% added variation in perceived value. The effect of e-SQ on Perceived value was positive and significant (b=1.4310, s.e.=.0629, p=.0000), conditional on online shopper FI = 0; and the effect of income on perceived value was significant (b= -.0641, s.e.=.0212, p<.0000), conditional on e-SQ = 0.

Since the interaction term in the model was statistically significant, the tests of simple slopes, which test the relationship between e-SQ (X) and perceived value(Y) at three levels of the moderator family income (W), have been conducted for better interpreting the nature of moderated relationship between e-SQ and Perceived value.

Conditional effects of the focal predictor at values of the moderator reveal that At -1 sd (i.e., at -1.1017) on the centered FI variable (representing low FI), the relationship between e-SQ and Perceived value was significant (b= 1.0961, s.e.=.1294, p=.0000). Similarly, at the mean (i.e., at 0) on the centered moderator variable (representing medium FI), the relationship was positive and significant (b=1.4310, s.e.=.0629, p=.0000). Finally, at +1sd (i.e., +1.1017) on the centered FI (represent high age, the relationship was positive and significant (b=.1.7659, s.e.=.0827, p=.0000).

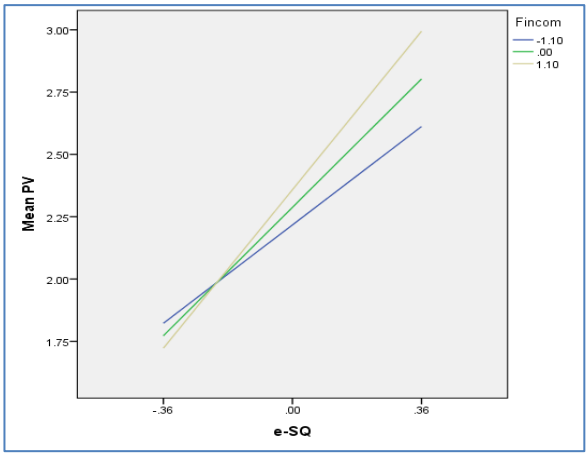


**Fig-4: Interaction Plot-3**

The interaction plot-3 represents the low, medium and high levels of e-shoppers family income towards the perceived value. It is clear that all the three

levels are not parallel. The change in e-service quality linearly changes the perceived value of the customers at low, medium and high levels of income.

## CONCLUSION

All the three hypotheses formulated are accepted as the interaction effect of the demographics gender, age and income was observed in the study. Gender was found as a significant moderator between the e-SQ and Perceived value. The interaction effect accounted for 1.59% added variation in perceived value. Examination of the interaction plot showed an enhancing effect that as e-service quality increases perceived value also will increase in the customers but the rate of change is varied. Age also was found to be a significant moderator between the e-SQ and Perceived value. The R-square change was .0736 indicating the interaction effect accounted for 7.36% added variation in perceived value. The interaction term was statistically significant in the model. The interaction plot relating to age represents that the change in e-service quality linearly changes the perceived value of the customers at all the agegroups. Family Income was also found to be a significant moderator between the e-SQ and perceived value. R-square change in Income revealed an added variation in perceived value. Three levels in the interaction plots also are not parallel representing a linear change in perceived value. It is concluded that the demographics such as gender, age and income of the online customer moderating the relationship between eservice quality and perceived value. With the interaction of demographics, the effect of e-service quality on the perceived value has been enhancing. Hence, it is suggested that the e-shoppers should keep in mind the demographics of the customers while selling and providing services.

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