
Impact of factors affecting customer satisfaction in e-commerce among Indian consumers: an empirical study

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Abstract: Customer satisfaction is an important aspect of any commercial activity. It assumes greater importance in e-commerce due to the lack of personal contact between the buyer and the seller. Achieving higher customer satisfaction levels pose a challenge for e-commerce companies due to the increased spatial and temporal separation between companies and web consumers. The present study is to investigate the factors affecting customer satisfaction in e-commerce among online consumers in India. A survey was carried out on 643 online customers. Structural equation modelling was applied to check the extent to which the considered variables predicted customer satisfaction in e-commerce. The results determined drive for technology acceptance, service quality, trust and social influence as key predictors of customer satisfaction in e-commerce. The practical contribution of the study is for online vendors by giving an insight into the perception of online customers about technology acceptance, service quality, trust, social influence and customer satisfaction towards e-commerce. Such understanding may enable managers to adopt effective marketing strategies steps to deliver their services more efficiently by creating trust in the mind of customers.

Keywords: customer satisfaction; e-commerce; online shopping; technology acceptance; service quality; TSTS E-SAT model; trust; social influence.

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1 Introduction

The usage of website and online trade has become an inevitable fact in the modern business world. As e-business industry is highly competitive (Zhang et al., 2010), online vendors need to invest not only for attracting more customers but also for motivating them to make purchase and repurchase (Rita et al., 2019; Barutçu, 2010). According to Gupta and Kim (2007), retaining existing customers are five times more profitable than gaining new customers. When the online customers are getting dissatisfied with online transactions, greater is the chance that they move back to the traditional way. In order to survive and succeed in the highly competitive online market (Li and Suomi, 2007) due to low switching cost, price transparency and tough competition, marketers need to fix their marketing activities after identifying the satisfaction level and the factors affecting the customer satisfaction of existing customers in e-commerce (Babakus et al., 2004). The small and medium sized enterprises in India also needs the adoption of modern technology to retain global competition in addition to keeping reliability and quality of their product (Waghmare et al., 2017). As an emerging country like India, price has an eminent role in attracting customers into online platform (Khare and Sarkar, 2020).

Kalia et al. (2018) observed that India is the third largest internet base that drives India as e-commerce hub in Asia after China and Indonesia. The following are the statistics measured by Internet World Stats (2020).

Table 1 Population and internet penetration (as on 31 May 2020)

	<i>World</i>	<i>Asia</i>	<i>China</i>	<i>India</i>
Population	7.80 billion (100%)	4.29 billion (55.1%)	1.44 billion (18.5%)	1.38 billion (17%)
Internet penetration (% of its population)	4.65 billion (59.6%)	2.305 billion (53.7%)	0.854 billion (59.3%)	0.56 billion (40.6%)

Source: Internet World Stats (2020)

Favourable FDI policy attracted the key players to enter into the Indian e-commerce market. The increased awareness in the internet usage and online shopping, the young demographic profile, increasing internet penetration, relative better economic performance are the main reasons for the rapid growth rate of e-commerce in India (India Brand Equity Foundation, 2017). Sheth (2013) stated that internet penetration was accelerated in India due to the decrease in the broadband subscription prices, launching 3G and 4G services. The following are the world and Indian B2C e-commerce sales growth rates 2013 onwards (Ecommerce Foundation, 2019).

Table 2 B2C e-commerce sales growth rates

<i>Year</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>	<i>2016</i>	<i>2017</i>	<i>2018</i>	<i>2019(f)</i>
World (US\$) trillion	520	650	830	1	1.2	1.3	1.5	1.8	2.1	2.3
India (US\$) billion	6.5	8.7	12.1	11.71	13.01	14.46	16.07	20.05	25.07	32.30

Source: Ecommerce Foundation (2019)

In 2017, the total contribution to the e-commerce sales of India was US\$ 37 billion (0.02%). India is the biggest emerging e-commerce market in the world (Codilar, 2017) due to increased rate of smart phones and internet penetration, busy schedule of working life, changing role of women, growing trust about online payments through plastic cards or net banking, convenient and economic internet access and also young demographic profile. Out of the total online customers, 65% people in India shop online by using the smart phone. It has created India as a large platform for m-commerce that boosts up the online sales growth (Codilar, 2017). In India, e-commerce market is a battlefield where major e-commerce players like Flipkart, Amazon and Snapdeal compete for each other to expand their areas by offering mega sale options to face cut-throat competition (Codilar, 2017).

2 Review of literature

The success of e-commerce mainly depends on the consumer behaviour that indicates how customers interact and participate in the online purchase of products (Liang and Lai, 2000). Theory of reasoned action (TRA) was developed by Fishbein and Ajzen (1975) to understand and predict the attitude and behaviour of customers. As per TRA, The actual behaviour of the customer is coming from the behavioural intention that is derived from attitude and subjective norm. In 1991, Ajzen (1991) proposed theory of planned behaviour (TPB) as an extension of TRA. According to TPA, there are three beliefs namely behavioural beliefs, normative beliefs and control beliefs in a human behaviour. Behavioural beliefs come from the attitude of the people after making the evaluation of

that situation. Normative beliefs derived from the subjective norms. Control beliefs are the perceived behavioural control that boosts up the performance of the actual behaviour. This theory helps to know how consumer changes their behaviour to shop online than physical store purchases.

Technology acceptance model (TAM) was developed by Davis (1989) and Bagozzi et al. (1992) to study the users acceptance of a particular system as an extension of TRA (Fishbein and Ajzen, 1975) and TPB (Ajzen, 1991). It explains how a customer accepts a specific technology. The American Customer Satisfaction Index (ACSI) model was developed by the National Quality Research Center (NQRC) to measure e-service quality of the consumers of the USA in 1994. Later it was used as a new type of customer-based measurement system to evaluate and enhance the evaluating-and-enhancing the performance of companies and economies (Fornell et al., 1996). Parasuraman (2000) developed technology readiness index (TRI) using four constructs namely optimism, innovativeness, discomfort and insecurity to measure people's general beliefs about technology. Szymanski and Hise (2000) also developed an e-satisfaction model in 2000 to investigate online customer loyalty by using convenience, merchandising, site design, and financial security. ETailQ model was developed to measure the excellence and quality of e-services in the online market by analysing website design, reliability/fulfilment, security/privacy and customer support (Wolfenbarger and Gilly, 2003). Kim (2005) developed an index of online customer satisfaction named as e-commerce customer satisfaction index (ECCSI) by testing repurchase behaviour and repurchase intention. The ECCSI provides a validity instrument to measure e-service quality and is rated very high at explaining actual repurchase behaviour and repurchase intentions.

The organisation should keep in mind the customer satisfaction during its online presence (Van Oostenbrugge, 2013) as the long-term profitability (Zhang et al., 2010), growth (Eid, 2011) and the sustainability of e-business success (Hung et al., 2014) are dependent on customer satisfaction. In the study of Zarei et al. (2019) it is found out that the attitude towards online purchase is dependent on customer satisfaction. It is most prominent factor to attract the traditional customers into the digital world (Shamdasani and Balakrishnan, 2000). In other words, once the new online customers are dissatisfied with the online purchase, greater is the chance that they move back to traditional commerce (Barutçu, 2010; Kim and Eom, 2002). Hence the success or failure of e-commerce is greatly determined by customer satisfaction in e-commerce. The high customer satisfaction shows that more people are enjoying online shopping.

The online companies need a base of satisfied customers for the sustainable operation (Chang and Wong, 2010) as the current e-commerce market have tough competition that involves a large volume of online vendors, offering similar or closely related products cheaply worldwide with better service. So the prominent way to overcome the effect of switching cost is to retain the level of customer satisfaction above average (Yang and Peterson, 2004). For repeat purchase, customers need to be satisfied with their online shopping experience (Kim and Stoel, 2004; Bearden and Teel, 1983). That means online customer satisfaction has significant positive effect on online repurchase intentions (Oliver, 1980; Churchill and Surprenant, 1982; Bearden and Teel, 1983; Anderson et al., 1997; Jones and Suh, 2000; Liu, 2012; Cronin et al., 2000). The rapid growth and competitions prevailed in the field of e-commerce highlights the importance of studying more about customer satisfaction (Liu et al., 2008).

In India, research into e-commerce is still in its infancy; government initiative to promote cash less transactions was definitely a boost up to frame a digital culture (Global Online Consumer Report, 2017). The wide exposure of Indians in the usage of smart phones and mobile apps boost up e-commerce (Khare and Sarkar, 2020). Chaudhary and Dey (2018) pointed out that there is a gender difference in the product selection, but both are mainly conscious in quality products with reasonable price. Still there is a need for better understanding of the factors affecting in the growth of e-commerce. Customer satisfaction is one of the most prominent factor to attract the traditional customers into the digital world (Shamdasani and Balakrishnan, 2000). Once the new online customers are dissatisfied with the online purchase, greater is the chance that they move back to traditional commerce (Kim and Eom, 2002; Barutçu, 2010). Hence the success or failure of e-commerce is greatly determined by customer satisfaction in e-commerce. The high customer satisfaction shows that more people are enjoying online shopping.

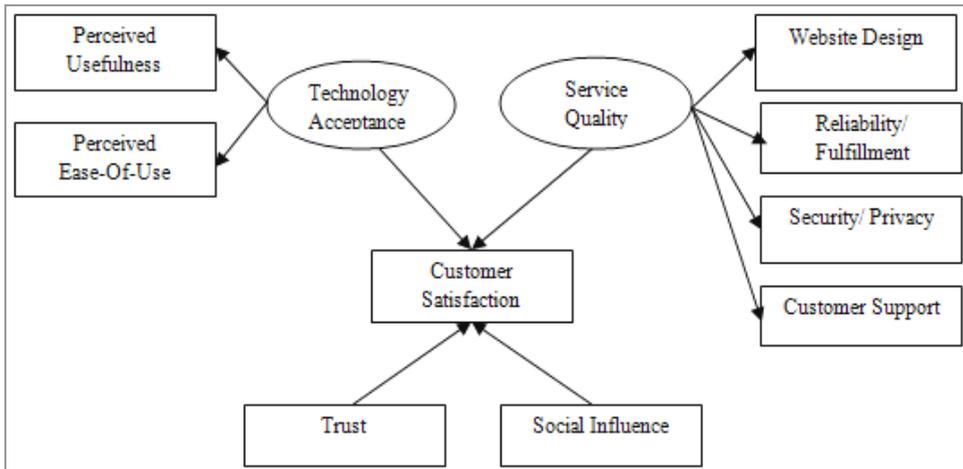
3 Conceptual framework and hypothesis formulation

Based on the extensive literature review, the study focuses on technology acceptance (TA), service quality (SQ), trust (TR) and social influence (SI) as the main factors affecting customer satisfaction (CS) in e-commerce. In this direction, the research has presumed certain relationship among these variables and the same had been conceptualised in the model represented in Figure 1.

3.1 Technology acceptance and customer satisfaction

Technology acceptance is measured under the study in terms of perceived usefulness and perceived ease of use which were adopted from TAM model, developed by Davis (1989). Perceived usefulness is measured to know how much a system would increase the performance of a person and in the case of perceived ease of use it shows how much a system would be used with free of physical and mental effort. Many studies have applied TAM for measuring the technology acceptance especially in online shopping, mobile commerce, online banking. In a large number of studies it is found out that there is a relationship between technology acceptance and customer satisfaction (Davis, 1989; Vijayasathy, 2004; Sudeep, 2008; Lin and Sun, 2009; Khare et al., 2012; Kumar, 2012b; Makhitha, 2014; Bolar and Shaw, 2015). The study of Parikh (2011), the perceived usefulness and perceived ease of use were used to know the attitude of the online customers towards e-commerce. Thus the following stated arguments, in our study setting, it is argued that the technology acceptance is one of the prominent factors affecting customer satisfaction in e-commerce.

Hypothesis 1 Technology acceptance has a positive impact on customer satisfaction in e-commerce.

Figure 1 Conceptual model of the study

3.2 Service quality and customer satisfaction

E-TailQ model is used to measure the service quality which was formed by Wolfinbarger and Gilly (2003). Website design, reliability/fulfilment, security/privacy and customer support are the four variables used to measure service quality. In the earlier studies the results of the research studies (Rita et al., 2019; Zarei et al., 2019; Hung et al., 2014; Tahir et al., 2013; Liu, 2012; Li and Suomi, 2007; Wolfinbarger and Gilly, 2003; Zeithaml et al., 2002; Cronin et al., 2000; Griffith and Krampf, 1998) have showed that there is positive relationship between service quality and customer satisfaction in e-commerce. Ashraf et al. (2016) pointed out that the service quality of e-commerce has a significant role for not only attracting online buyers to a website, but also motivating them to make a purchase. Higher service quality helps to keep a lasting competitive advantage by building up long-term relationship with their online customers (Liu, 2012). As there is no direct contact with product and seller in e-commerce, the service quality has its own role in the customer satisfaction. Thus considering the above stated arguments, in this study it is presumed that service quality has a strong impact on customer satisfaction in e-commerce.

Hypothesis 2 Service quality has a positive impact on customer satisfaction in e-commerce.

3.3 Trust and customer satisfaction

Even though people are aware about the potential of e-commerce, they are hesitant to shop online due to trust matters. Lack of trust is one of the barriers in the growth of e-commerce (Kumar, 2012b) as it causes to avoid online purchase of products. A high level trust among customers leads to form favourable attitude towards online buying (Faraoni et al., 2019; Rita et al., 2019; Mayer et al., 1995; Anderson and Narus, 1990). Trust reflects the confidence of the online customers in the integrity of online vendors to keep its promises and commitments. The study also showed the importance of making a trustworthy impression in the online shopping sites. Eid (2011) found out that customer

trust is an important factor for the long-term growth of e-commerce. Trust has a key role to face tough competition in e-commerce (Clarke, 1999; Cranor, 1999; Gefen, 2000; Jarvenpaa et al., 2000; McKnight et al., 1998; Aeron et al., 2019). Trust has a prominent role in e-commerce where the presence of uncertainty and risk is more (Sullivan and Kim, 2018; Kumar, 2012b). The satisfaction and expected outcome from e-commerce depends on the basis of trust element (Pavlou, 2003) that is created by keeping its promises and commitments thereby imparting confidence among online customers.

Kumar (2012b) reasoned that the trustworthiness of websites is the main worry of the consumers when they have to input their credit card information online anticipating various on line scams. Reputation of the brand, customers' previous experience, interactions between company and customer, media influence and word-of-mouth are the external factors leading to trust (Hallikainen and Laukkanen, 2018; Briggs and Hollis, 1997). Trust is very important in e-commerce than the traditional commerce as it involves more uncertainty, risk and absence of direct contacts between vendors and buyers (Faldu, 2013). In the study conducted by Alavi (2012), credibility and communication are the main components to create online trust. Credibility can be achieved by reducing consumer uncertainty, resolving consumer problems and increasing altruism. Two way continuous communications are necessary for creating trust in the mind of online customers. Feedback from online buyer and follow up on the side of online vendor makes a trustworthiness environment in e-commerce. Thus in the current study, it is expected a positive relationship postulate with the following hypothesis:

Hypothesis 3 Trust has a positive impact on customer satisfaction in e-commerce.

3.4 Social influence and customer satisfaction

Social influence is an informal communication among consumers regarding the suppliers and/or product characteristics (Sudeep, 2008). The study conducted by Yadav and Rahman (2017) proved the significance of social media to develop and retain the customer base through SMMA dimensions. The study of Tahir et al. (2013) states that consumers post negative or positive comments about products or services on the basis of their experiences. The potential customers read these rating and make purchase decisions. Thus consumer reviews turn into customer satisfaction and customer satisfaction turn into word of mouth of the company. Positive correlation between satisfaction and WOM has been found out (Rita et al., 2019; Swan and Oliver, 1989; Shi et al., 2016). Ranaweera and Prabhu (2003) stated that unsatisfied customers would like to produce negative WOM and satisfied customers are more likely to spread positive WOM. Anderson (1998) confirmed the relationship of customer satisfaction and WOM as when the degree of satisfaction is higher or lower, the intention to spread WOM is higher and when the satisfaction is average, their WOM is lower. Influence of reputation of the web stores and reference groups and its popularity are the prime reasons for taking online purchase decision (Muthalif, 2015). In addition to this, the trend of huge shopping malls is increased in India, providing variety of national as well as international products. Social media has its own role in promoting e-commerce through aggressive advertisements. This has helped several e-commerce companies build substantial brand image (Ladda, 2014). Thus, here in this study we postulate that:

Hypothesis 4 Social influence has a positive impact on customer satisfaction in e-commerce.

As per the literature review, one of the main factors affecting the growth of e-commerce is the customer satisfaction derived from the online transactions. The customer satisfaction in e-commerce leads developing country like India to a greater height in the digital world. The decreasing customer satisfaction or customer dissatisfaction is the leading factor affecting the online customers to move from one website to another or even move back to offline mode. In a developing country like India, economy must be transparent through digital way to be a developed one. The high cost of attracting and retaining people in e-commerce make the study of customer satisfaction in e-commerce relevant. The literature review has shown that a number of studies have been conducted in the topic customer satisfaction in e-commerce. However, most of these studies have been undertaken in developed countries. It is found out that there was no much more systematic study conducted regarding customer satisfaction in e-commerce with special reference to Kerala, one of the states in India. The study made an attempt to know how customer satisfaction is related to technology acceptance, service quality, trust and social influence.

4 Research methodology

Based on the literature review in the context of India, the study is proposed the objective of developing a research model showing the influence of technology acceptance, service quality, trust and social influence on customer satisfaction in e-commerce among online customers. The research design of the study is descriptive as well as analytical in nature. SPSS 21 and AMOS 21 are used for analysing the data.

Both on-line and off-line mode is used for data collection (Chang and Chen, 2008) by using well-structured questionnaire. Most of the items on the questionnaire were adapted from the review of literature with some modifications. Technology acceptance, service quality, trust and social influence are the variables used as factors affecting customer satisfaction in e-commerce. The items of PU and PEOU to measure technology acceptance were adapted from Davis (1989). The items for website design, reliability/fulfilment, security/privacy and customer support were adapted from Wolfinbarger and Gilly (2003). The base of the items related with trust, social influence and customer satisfaction were taken from the review of literature. Modifications have been made in the instruments by the researcher to suit the questionnaire in the current situation. The online customers in Kerala who have purchased at least two physical products and have completed 18 years old is the sample unit under the study. Since the study was confined to only in the State of Kerala, the respondents were divided into three zones namely North Kerala, Central Kerala and South Kerala. Top B2C websites namely Amazon, Flipkart and Snapdeal were selected for the study. A total of 643 valid responses were used for analysis and interpretation.

Table 3 shows the percentages of the respondents divided according to gender, age, educational qualification, occupation and locality.

Table 3 Demographic characteristics of online customers

<i>Demographic characteristics</i>		<i>Percent</i>
Gender	Males	64.5
	Females	35.5
Age	1982–1999 (millennials)	56.6
	1966–1981 (Generation X)	38.1
	1946–1965 (baby boomers)	5.3
Educational qualification	Up to HSc/diploma	18.7
	UG	33.4
	PG	33.6
Occupation	Professional	14.3
	Student	41.5
	Private employee	28.0
	Government employee	15.7
Locality	Self employed	14.8
	Urban	33.3
	Semi urban	34.1
	Rural	32.6

Note: Sample size: 643.

Source: Primary data

5 Data analysis

Validity and reliability of the instrument was tested through appropriate data analysis. The crucial element of finding out the relationships of technology acceptance, service quality, trust and social influence on customer satisfaction were analysed using statistical tools like SPSS and AMOS.

5.1 Validity and reliability check

The instruments demonstrate evidence of both convergent and discriminant validity. Convergent validity (Table 4) is ensured with high factor loading, composite reliability (CR) measured above 0.50 and average variance extracted resulted above 0.05. The discriminant validity was ensured by comparing the pair-wise correlation between all the construct measures with its AVEs. In all cases, the AVEs (Table 5) were greater than the pair-wise construct correlations that showed the discriminant validity. In short, the CFA results supported that the scale measures used to capture the dimensions that were reliable and valid.

Table 4 Calculation of AVE and CR

<i>Components</i>		<i>Factor loading</i>	<i>AVE</i>	<i>Sum of FL</i>	<i>CR</i>
Perceived usefulness	PU1	0.737	0.663	5.687	0.932
	PU2	0.862			
	PU3	0.860			
	PU4	0.772			
	PU5	0.863			
	PU6	0.746			
	PU7	0.846			
Perceived ease of use	PEOU1	0.708	0.616	3.885	0.887
	PEOU2	0.858			
	PEOU3	0.863			
	PEOU4	0.862			
	PEOU5	0.594			
Website design	WD6	0.848	0.616	4.696	0.905
	WD5	0.780			
	WD4	0.718			
	WD3	0.861			
	WD2	0.692			
	WD1	0.797			
Reliability/fulfilment	REF5	0.617	0.528	3.623	0.848
	REF4	0.791			
	REF3	0.743			
	REF2	0.754			
	REF1	0.718			
Security/privacy	SEP1	0.748	0.554	4.453	0.881
	SEP2	0.816			
	SEP3	0.790			
	SEP4	0.713			
	SEP5	0.740			
	SEP6	0.646			
Customer support	CS5	0.641	0.575	3.775	0.870
	CS4	0.710			
	CS3	0.768			
	CS2	0.821			
	CS1	0.835			

Table 4 Calculation of AVE and CR (continued)

<i>Components</i>		<i>Factor loading</i>	<i>AVE</i>	<i>Sum of FL</i>	<i>CR</i>
Social influence	SI8	0.623	0.502	5.615	0.888
	SI7	0.837			
	SI6	0.531			
	SI5	0.834			
	SI4	0.636			
	SI3	0.758			
	SI2	0.697			
	SI1	0.699			
Trust	TR6	0.776	0.649	4.832	0.917
	TR5	0.831			
	TR4	0.772			
	TR3	0.841			
	TR2	0.817			
	TR1	0.795			
Customer satisfaction	SAT1	0.807	0.639	7.178	0.941
	SAT2	0.833			
	SAT3	0.795			
	SAT4	0.891			
	SAT5	0.771			
	SAT6	0.712			
	SAT7	0.832			
	SAT8	0.825			
	SAT9	0.711			

Table 5 Calculation of discriminate validity [DV]

<i>Factors</i>	<i>AVE</i>	<i>SIC</i>								
		<i>PU</i>	<i>PEOU</i>	<i>WD</i>	<i>REF</i>	<i>SEP</i>	<i>CS</i>	<i>SI</i>	<i>ET</i>	<i>ES</i>
PU	0.663	-								
PEOU	0.616	0.612	-							
WD	0.616	0.536	0.453	-						
REF	0.528	0.508	0.438	0.473	-					
SEP	0.554	0.516	0.567	0.497	0.370	-				
CS	0.575	0.539	0.578	0.475	0.477	0.493	-			
SI	0.502	0.563	0.371	0.561	0.339	0.419	0.456	-		
TR	0.649	0.554	0.377	0.585	0.508	0.370	0.536	0.384	-	
SAT	0.639	0.505	0.411	0.475	0.429	0.417	0.529	0.378	0.473	-

The homogeneity of the items was fixed by measuring Cronbach's alpha (Table 6) which should be between 0.70 and 0.95 is considered as best figures for optimum internal consistency of the instrument.

Table 6 Cronbach's alpha of the constructs

<i>Construct</i>	<i>No. of items (initial)</i>	<i>No. of items (after deletion)</i>	<i>Items dropped</i>	<i>Cronbach's alpha (initial)</i>	<i>Cronbach's alpha (after deletion)</i>
PU	7	7	---	0.931	0.931
PEOU	7	5	PEOU5 and PEOU6	0.731	0.820
WD	6	6	---	0.875	0.875
REF	5	5	---	0.805	0.805
SEP	6	6	---	0.878	0.878
CS	5	5	---	0.858	0.858
TR	6	6	---	0.873	0.873
SI	8	8	---	0.853	0.853
SAT	9	9	---	0.853	0.853
Sample size (N) = 643				No. of items = 9	

5.2 Structural equation model (SEM)

Although there are no directly comparable studies, this study has adopted TAM and e-TailQ model to explain the empirical model. Under the study, there are four relationships have been found namely relationship between technology acceptance and customer satisfaction, service quality and customer satisfaction, trust and customer satisfaction and social influence and customer satisfaction. Figure 2 shows the SEM model and along with the standardised coefficient loading.

The findings of analysis of the variables in the SEM are shown in Table 7. Since p-value is less than 0.01 under SEM, all hypothesis were proved as all variables have relationships with customer satisfaction. The unstandardised coefficient of trust on customer satisfaction is 0.682, technology acceptance on customer satisfaction is 3.450, service quality on customer satisfaction is 0.922 and social influence on customer satisfaction is 0.151 which represent the partial effect of each variable on customer satisfaction, holding the other path variables as constant. The estimated positive sign implies that such effect is positive that customer satisfaction would increase by 0.682 for every unit increase in trust, 3.450 for every unit increase in technology acceptance, 0.922 for every unit increase in service quality and 0.151 for every unit increase in social influence and this coefficient value is significant at 1% level.

In this structured equation model, the four standardised coefficients of the paths to customer satisfaction are 0.569 (trust on customer satisfaction), 0.526 (technology acceptance on customer satisfaction), 0.141 (service quality on customer satisfaction) and 0.151 (social influence on customer satisfaction). The most influencing path to customer satisfaction in the SEM model is trust on customer satisfaction (0.569) and followed by technology acceptance on customer satisfaction (0.526). The least influencing path to

customer satisfaction in the SEM model is service quality on customer satisfaction (0.141) and followed by social influence on customer satisfaction (0.151).

Table 7 Variables in the SEM analysis

<i>Variables</i>		<i>Unstandardised coefficient (B)</i>	<i>S.E of B</i>	<i>Standardised coefficient (beta)</i>	<i>t-value</i>	<i>p-value</i>
Customer satisfaction	← Trust	0.682	0.030	0.569	23.044	<0.001**
Perceived usefulness	← Technology acceptance	6.470	0.257	0.895	25.155	<0.001**
Perceived ease of use	← Technology acceptance	3.982	0.176	0.818	22.572	<0.001**
Website design	← Service quality	4.772	0.176	0.875	27.173	<0.001**
Reliability	← Service quality	4.063	0.145	0.892	28.037	<0.001**
Security/privacy	← Service quality	4.051	0.180	0.771	22.477	<0.001**
Customer support	← Service quality	3.612	0.155	0.790	23.284	<0.001**
Customer satisfaction	← Technology acceptance	3.450	0.195	0.526	17.732	<0.001**
Customer satisfaction	← Service quality	0.922	0.171	0.141	5.383	<0.001**
Customer satisfaction	← Social influence	0.151	0.022	0.167	6.768	<0.001**

Note: **denotes significant at 1% level.

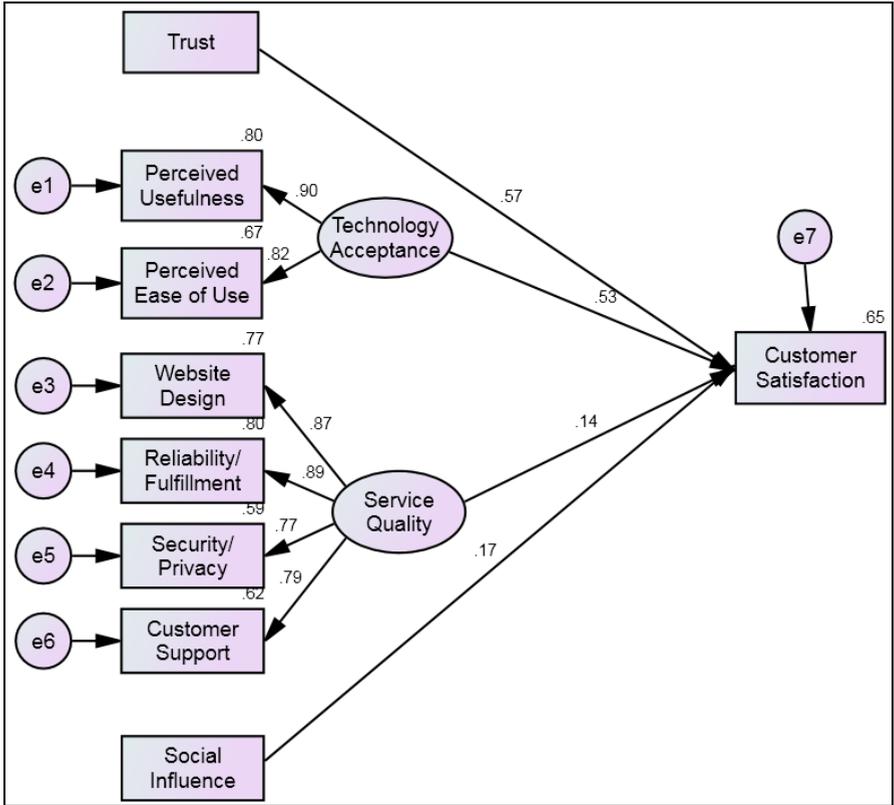
Table 8 Model fit summary of SEM

<i>Indices</i>	<i>Value</i>	<i>Suggested value</i>
Chi-square value	91.691	-
DF	26	-
Chi-square value/DF	3.527	<5.00 (Hair et al., 1998)
GFI	0.940	>0.90 (Hu and Bentler, 1999)
AGFI	0.925	>0.90 (Hair et al., 1998)
NFI	0.976	>0.90 (Hu and Bentler, 1999)
CFI	0.958	>0.90 ((Hair et al., 1998)
RMR	0.065	<0.08 (Hair et al., 1998)
RMSEA	0.054	<0.08 (Hair et al., 1998)

From Table 8 it is found that the chi-square value/DF is 3.527 which is less than 5.00 which indicates perfectly fit. Here goodness of fit index (GFI) value (0.940) and adjusted goodness of fit index (AGFI) value (0.925) is greater than 0.9 which represent it is a good fit. The calculated normed fit index (NFI) value (0.976) and comparative fit index (CFI) value (0.958) indicates that it is a perfectly fit and also it is found that root mean square

residuals (RMR) and root mean square error of approximation (RMSEA) value is 0.065 and 0.054 respectively which are less than 0.08 which indicated it is perfectly fit.

Figure 2 SEM based on standardised coefficient on customer satisfaction in e-commerce (see online version for colours)



6 Discussion and conclusions

The research findings of this study found out that the customer satisfaction in e-commerce is in moderate level. It is confirmed that technology acceptance, service quality, trust and social influence are the important factors for improving customer satisfaction in e-commerce and also validated their relationships with customer satisfaction in e-commerce in the model. The study also pointed out that the e-commerce sites need to be more cautious consistently to meet the expectation of the online customers. The words, deeds, terms and conditions of e-commerce websites need to be professional and accommodative. The clear cut policies, rules and regulations have its own role in ensuring satisfaction among users in e-commerce (Algarni, 2015).

The present study shows that there is a positive effect of technology acceptance on customer satisfaction in e-commerce (Davis, 1989; Vijayasarathy, 2004; Sudeep, 2008; Parikh, 2011; Khare et al., 2012; Makhitha, 2014; Kumar, 2012b; Bolar and Shaw, 2015; Lin and Sun, 2009). It is the second most influencing factor affecting customer

satisfaction under the study. The positive effect of service quality on customer satisfaction in e-commerce is revealed under the study (Zarei et al., 2019). Higher service quality helps to keep a lasting competitive advantage by building up long-term relationship with their online customers (Liu, 2012). The results are in consensus with the earlier research studies (Hung et al., 2014; Tahir et al., 2013; Liu, 2012; Li and Suomi, 2007; Wolfenbarger and Gilly, 2003; Zeithaml et al., 2002; Cronin et al., 2000; Griffith and Krampf, 1998).

It is also found out that there is a positive effect of trust on customer satisfaction. When trust is increased, customer satisfaction would also be increased and thereby influenced positively in the growth of e-commerce. Trust reflects the confidence of the online customers in the integrity of online vendors to keep its promises and commitments. Eid (2011) found out that customer trust is an important factor for the long-term growth of e-commerce. Trust has a key role to face tough competition in e-commerce (Clarke, 1999; Cranor, 1999; Gefen, 2000; Jarvenpaa et al., 2000; McKnight et al., 1998). Trust has a prominent role in e-commerce where the presence of uncertainty and risk more (Kumar, 2012b). Social influence is very important for the success of e-commerce (Sudeep, 2008). Under the study, it has also a positive effect on customer satisfaction in e-commerce. It is found out that the social networking sites are helpful to know the latest trends in the market. Opinions, reviews, recommendations, ratings in the social networking sites like Facebook, blog, twitter, etc., are taken into consideration while making online purchase.

7 Managerial and theoretical implications

Customer satisfaction is one of the important factor in the success of e-commerce. Managers should work for improving the customer satisfaction that makes the customers loyal. The main theoretical contribution of the study is the finding that technology acceptance, service quality, trust and social influence are significantly influenced with customer satisfaction in e-commerce and development of a model in the name of TSTS e-satisfaction model (TSTS E-SAT model). The findings of the study will be beneficial for the online companies and customers in various ways. To ensure customer satisfaction, the customers can use the e-commerce sites easily and fluently to carry out their tasks with minimum effort. E-commerce sites need to be designed to enhance the user friendliness and credibility thereby ensuring technology acceptance. The online companies need to focus on the service quality by improving website design, reliability/fulfilment, security/privacy and customer support in order to attract new customers as well as to retain the existing customers in e-commerce. The main bottleneck of the customers in e-commerce is the trustworthiness of websites. The online companies need to take necessary steps to improve trust by following standards, giving professional outlook, continuous feedback, updated information in the websites, security measures, safe and easy payment system and quality logistics for proper delivery of products without damage. The words, deeds, terms and conditions of e-commerce sites need to be professional and accommodative.

Online companies need to ensure their presence in social networking sites. This is the tool to keep touch with their existing and potential customers all the time. Asking questions, sending personalised messages or offers, giving constant support, communicating latest trends of the market are the techniques usually employed by the

reputed online companies like Amazon, Flipkart to create and sustain loyal customers. Customers give utmost care to the opinions, reviews, recommendations, and ratings in the social networking sites like Facebook, blog, twitter, etc., while making their purchase decision because only satisfied customers post positive feedback and vice versa. The feedback helps not only the customers to know about the product but also the online companies to collect insights about the products by knowing their needs.

8 Limitations and future scope

Even though the study is extensive, innovative, unique and pioneering, it has some limitations but results into various scopes for the future studies in this domain. The most popular websites namely Amazon, Flipkart and Snapdeal were used in the study. The choice of the respondents of the study is not based in probabilistic sampling technique. Future studies may be planned in which respondents are selected using a probabilistic method. It can be extended to other popular/local websites as well as mobile applications. Only B2C models have taken under the study. Thus the findings of the study may not be accurately suitable to other e-commerce models. Future studies may be conducted in other e-commerce models also. The study is limited to technology acceptance, service quality, trust and social influence towards customer satisfaction in e-commerce. The future study may extend to other influencing variables. Since little research has been done so far in this domain in developing countries like India, the replication of these types of research in future will definitely emphasise and support the validity of the findings already arrived at.

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Appendix

Measurement items

Constructs and scale items

Technology acceptance

- Online shopping websites enhance my effectiveness in shopping.
- Online shopping websites improve my shopping experience.
- Online shopping websites help to save a lot of time and money.
- Online shopping websites are useful for doing my shopping.
- Online shopping websites helps me to search and buy items faster.
- Online shopping websites enhance my productivity while shopping.
- Online shopping websites make my shopping easier.
- Interacting with online shopping websites do not require a lot of my mental effort.
- I find it easy to get online shopping websites to do what I want it to do.
- My interaction with online shopping websites is clear and understandable.
- I find that online shopping websites are not easy to access.
- Online shopping websites provide helpful guidance in performing tasks.

Service quality

- Online shopping websites have effective search functions.
 - Online shopping websites load quickly.
 - Online shopping websites are clear and simple.
 - Online shopping websites cover all types of business content properly.
 - I find that online shopping websites are easy to use.
 - Overall, online shopping websites technically work very well.
 - When I place an order, I could receive the goods quickly.
 - Online shopping websites are obliged to do the prompt delivery on time.
 - I obtain exactly the same products which I ordered.
 - My requests and suggestions are not properly handled by the online shopping websites.
 - Online shopping websites normally deal delivery delays monetarily or non-monetarily.
 - Online shopping involves very little risk.
 - I feel safe in my transactions at online shopping websites.
 - I feel that online shopping websites will not misuse my personal information.
 - I am happy with the security measures provided by the online shopping websites.
 - I feel safe with my internet connectivity while doing online purchase.
 - I am confident in the privacy policy of the online shopping websites.
 - Online shopping websites respond promptly to my requests.
 - Online shopping websites provide prompt redressal to my complaints.
 - Online shopping websites sincerely solve any problems if any occurs.
 - Online shopping websites handle customer service problems on time.
 - Online shopping websites make available frequently asked questions (FAQ) so as to clear common queries.
-

Trust

Online shopping websites impart a trustworthy impression in me.
I believe that online shopping websites keep up its promises and commitments.
I am not confident in the integrity of online shopping websites.
I feel that online shopping websites can only do what is right.
I feel confident on dealing with online shopping websites.
I trust online shopping websites treat me honestly.

Social influence

I prefer word-of-mouth while I choose the products or services.
I have given due consideration on opinions, reviews, recommendations and ratings available in social networking websites (SNSs) like Facebook, Blog, Whatsapp, Twitter etc.
Social networking websites are helpful to know the current trends in the market.
The society where I live encourages me to do online shopping.
My friends and colleagues encourage me to use online shopping websites.
There are individual or groups discouraging the use of online shopping websites.
There are individual or groups recommending online shopping websites.
I feel demonetisation encourage me to use online shopping websites.

Customer satisfaction

Online shopping websites consistently meet my expectations.
My overall experience with the online shopping websites is satisfactory.
Online shopping websites are capable and proficient service providers.
Online shopping was not successful.
My choice to purchase from online shopping websites was a wise one.
I usually visit online shopping websites first when I need to shop.
I intend to continue buying through online shopping sites.
