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Trust and product as moderators in online shopping behavior: evidence from India

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Abstract

Purpose – The present study is aimed at examining the antecedents of online shopping user behavior and customer satisfaction. More specifically, (1) the effect of social influence, variety seeking behavior, advertising and convenience on user behavior, and (2) the effect of user behavior on customer satisfaction are examined.
Design/methodology/approach – A conceptual model is developed and tested after verifying the psychometric properties of the survey instrument. Data were collected from 556 respondents from three major cities (Hyderabad, Chennai and Bangalore) in the southern part of India using structured instrument. Hierarchical regression is performed. Measurement model was checked using structural equation modeling (Lisrel package).
Findings – The results reveal that (1) social influence, (2) variety seeking, (3) advertising, (4) convenience, (5) trust and (6) product factors were positively related to online user behavior. Results also show that user behavior is significantly and positively related to customer satisfaction. The hierarchical regression results also showed moderating effects of (1) trust in the relationship between social influence, variety seeking and user behavior, and (2) product factors in the relationship between advertising, convenience and user behavior. Finally, results suggest that user behavior is partially mediating the relationship between trust and customer satisfaction, i.e. trust has both direct and indirect effect on customer satisfaction.
Research limitations/implications – As with any survey-based research, the present study suffers from the problems associated with self-report measures viz., common method bias and social desirability bias. However, the authors attempted to minimize these limitations by following appropriate statistical techniques.
Practical implications – This study contributes to both practicing managers and the literature on advertising. The study suggests that trust and product play a major role in strengthening the relationship between antecedents and user behavior.
Originality/value – This study provides new insights about the importance of gaining trust in influencing consumer behavior. The conceptual model the authors developed is novel in the sense not many studies are available in India to empirically examine the moderating relationships of trust and product in consumer behavior.

Keywords User behavior, Customer satisfaction, Trust, Product, Variety seeking, Convenience, Online shopping

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1. Introduction

With increase in e-commerce, the prevalence of online shopping has attracted the attention of researchers in the field of marketing (Lim *et al.*, 2016; Tandon *et al.*, 2017). As opposed to traditional brick-and-mortar business model, the Internet-based e-commerce model has been accepted as one of the marketing strategies by companies to capture market share (Johnson *et al.*, 2001; Zuroni and Goh, 2012). Internet has emerged as a channel of distribution where people exchange information, find entertainment, buy and sell online. Organizations use Internet as a useful platform for sales (examples are Flipkart, Instacart, Amazon, e-bay etc.,) and the number of online customers is increasing day by day. Online shopping has become order of the day because of several advantages such as convenience, time-saving and comparison of different products which are available online. Though traditional customers prefer to visit shops before making purchase decisions, the present trend is to buy products with a single click of mouse. At present, because of social distancing norms due to coronavirus disease 2019 (COVID-19) global pandemic, customers prefer to buy groceries, daily necessities, electronics, electrical equipment, food, etc. through online. Nearly for over two decades, web-based shopping, also called online shopping, has become order of the day.

Researchers in the past attempted to explain the antecedents of online shopping and documented that demographic characteristics such as age (Moskovitch, 1982), gender (Powell and Ansic, 1997; Yang and Lester, 2005) and income (Swinyard and Smith, 2003) play a significant role in purchase decisions. In one study by Donthu and Garcia (1999), it was found that consumers who prefer variety and convenience engage in online shopping. In the literature review, Chang *et al.* (2005) have summarized various antecedents of online shopping examined by several researchers (p. 545). In a recent study conducted in India by Sonwaney and Chincholkar (2019), various factors affecting online consumer behavior have been listed, including the demographic variables, personality traits, social and psychological factors, etc. The present study is also focused in the Indian context wherein a conceptual model of antecedents and consequences of online shopping is developed and tested.

According to forecast from Internet retailer, a digital commerce 360 brand, e-commerce has been increasing at a rapid rate, from $2.93 tn dollars in 2018 and $3.46 tn in 2019. The e-commerce including business-to-business (B2B) and business-to-consumer (B2C) is expected to reach $4 tn in 2020 (Digital Commerce, 2019). Increase in online shopping has attracted the attention of researchers in the field of marketing and most of the studies are centered in Western countries. Very rarely we find studies pertaining to India. To our knowledge, whatever the studies available in India were at rudimentary level where the focus was more descriptive rather than prescriptive. By descriptive, we mean the researchers attempted to analyze the influence on demographics (such as age, income, gender, educational qualifications, marital status, and size of the family, etc.) on online shopping behavior (Kanchan *et al.*, 2015). Extant research supports that gender, education, marital status, income and residential location are important predictors of online purchasing by consumers (Mehta and Sivadas, 1995; Sultan and Henrichs, 2000; Sonwaney and Chincholkar, 2019). There is a dearth of in-depth study of antecedents of user behavior in terms of developing a conceptual model and testing it in a robust way. The main objective of the present study is to identify the underlying antecedents of user behavior and their influence on customer satisfaction.

1.1 Indian context

Online shopping is gaining momentum in the Indian market due to growth in technology and availability of various tools of electronic communication (including mobile phones, laptops, tablets, etc.,) during the last decade. It is estimated that over 40 m users transacting online in 2019. Some researchers estimated that the average online shopper does at least four to five

transactions per month (Kanchan *et al.*, 2015). In India, some researchers documented that younger generation are more inclined to go for online shopping (Ghosal *et al.*, 2020; Jain and Jain, 2011). According to India Brand Equity Foundation (IBEF), the Indian e-commerce market is expected to grow from US $ 38.5 bn in 2017 to US$ 200 bn by 2026. Phenomenal growth of e-commerce is due to World Wide Web and smartphone usage by consumers. It is estimated that the overall total Internet user base is around 830 m in 2021, an increase from 637 m in 2019. The total e-commerce revenue is expected to reach over US $ 250 bn in 2020, representing a growth rate of over 50% (IBEF, , growing at an annual rate of 51 per cent, the highest in the world (IBEF, 2020). Social media (Facebook, twitter, WhatsApp) play a significant role in influencing the online shopping by consumers. For example, there are over 63 m Facebook users in India and over 150 m Internet users. It is estimated that over 10 m engage in online shopping (Kanchan *et al.*, 2015). Considering large market share of online shoppers, it is important to study the online shopping behavior of consumers in India. With global pandemic COVID 19, the online shopping by consumers has been ever increasing. Though the study was conducted just prior to the onset of global pandemic, the study has interesting implications for both managers and organizations. The study is relevant today because even the traditional consumers who were habituated for offline shopping, the global pandemic induced them to engage in online shopping. As anecdotal evidences suggest, consumers are getting habituated to online shopping and therefore the results from the study will have practical significance today.

2. Theoretical background and development of hypotheses

The theory of reasoned action (TRA) is a theoretical background for the present study (Ajzen and Fishbein, 1980). According to TRA, intensions of consumers depend on the target, context and action. The intentions of customers of online depends on the web environment, security of the website and quality of the product offered (Chen and Dibb, 2010; Salisbury *et al.*, 2001). Simply stated, the attitude of consumers determines purchase intention which in turn affects the purchase behavior (Ajzen and Fishbein, 1980). Intentions to do online shopping influence the user behavior and lack of intention restricts consumers to go for online shopping. A consumer evaluates the online products by getting information from his or her reference group before making purchase decisions. Empirical evidence suggests that consumers purchase decision is explained by their attitudes, and attitude toward online buying is a significant predictor of a consumer's purchase intention (Chang, 1998). In one study conducted in Malaysia, Lim *et al.* (2016) documented that perceived usefulness influences online buying behavior through purchase intention. In this sense, technology acceptance model (TAM) model is applicable that influences the user behavior.

2.1 Antecedents of user behavior

In the present research, social influence, variety seeking, advertising, convenience, trust and product factors were considered as antecedents to user behavior. Reference groups, social class and sub-culture play a vital role in influencing consumer's buying decisions (Belk, 1988; Ajzen, 1991). People tend to interact with each other through social media and other means and such interaction is a significant motivator for online shopping (Rohm and Swaminathan, 2004). Two decades back, Donthu and Garcia (1999) documented that consumers who seek convenience and variety tend to go for online shopping. Product availability, security risk and economic benefits the consumers perceive are important factors in online shopping (Koyuncu and Bhattacharya, 2004). Some researchers documented that consumers are more likely to buy low cost and frequently purchased products and shy away from high cost products and prefer intangible and differentiated products (Phau and Poon, 2000;

Vijayasarathy, 2002). Several studies reported that online shoppers are motivated by convenience (Brown *et al.*, 2003; Orapin, 2009).

We often find consumers may, in addition to day-to-day buying, engage themselves in variety-seeking buying such as going to restaurants for dinner, buying a variety of products different from routine. Variety-seeking buying behavior refers to consumers' *low purchase involvement* and ability to perceive significant differences among brands (Kotler and Armstrong, 2014). In fast-moving consumer goods, one study conducted in India documented that consumers engage in variety-seeking as they find different brands (Jayanthi and Rajendran, 2014).

One of the hallmarks of online buying is convenience (Jiang *et al.*, 2011; Xiang *et al.*, 2016). Researchers documented that the traditional retail formats of marketing are threatened by new kind of store, called the online or Internet store which is convenient for the consumers to engage in shopping from whatever the location (Bhatnagar *et al.*, 2000). Though some consumers may perceive risk involved in online shopping because of prevalence of credit card frauds, the convenience involved in online shopping overshadows the risk. There has been unanimity among researchers that online shopping convenience has been an important factor the consumers consider while making purchase decisions (Aragoncillo and Orús, 2018; Beauchamp and Ponder, 2010; Chiang and Dholakia, 2003; Wu *et al.*, 2011). Consumers are also influenced by discounts in prices offered by companies such as Amazon and Flipkart. Price is a significant variable that influences the consumers and discounts, buy one get one free offers, coupons attract consumers to engage in e-shopping. E-commerce is a broad term that has been used to represent e-shopping, e-market and e-consumer behavior.

Another very important factor that drives consumers toward products or brands is the advertising strategy of companies. Advertising literature is replete with benefits of advertising on websites that lure the customers, and, in that process, companies endorse celebrities (Aaker, 1991; Erdogan, 1999; Kim *et al.*, 2018). Companies expect that advertising is positively related to user behavior to justify enormous amounts being invested in endorsing celebrities.

Online buying and repeated purchases depends on the trust that company delivers whatever is being purchased by consumers. Any differences in the quality product mentioned in the advertisement and actual quality of the product that is delivered will shy consumers away from purchasing. The greater the trust, the more likely that consumers engage in online shopping. For example, if consumers order goods online through Instacart, consumers expect the same products being delivered. Finally, product features as displayed in the advertisement also play a greater role in consumer purchase decisions. Both product factors and trust on the company are expected to influence consumers' buying behavior.

While social influence, variety seeking, advertising, convenience, trust and product factors are positively related to user behavior, extant research documented that user behavior is positively related to customer satisfaction (Kumar, 2016; Park and Lee, 2009; Rahman *et al.*, 2018). If a customer is satisfied with online shopping, it is more likely that he or she will continue to pursue online shopping. Based on the above, we hypothesize:

H1. Social influence is positively related to user behavior

H2. Variety seeking is positively associated with user behavior

H3. Advertising is positively related to user behavior

H4. Convenience is positively associated to user behavior

H5. Trust is positively related to user behavior

H6. Product factors are positively associated with user behavior

H7. User behavior is positively related to customer satisfaction.

2.2 Moderator hypotheses

Trust plays a major role in influencing the customers (Lee and Turban, 2001; Raijas and Tuunainen, 2001; Goode and Harris, 2007). Trust here refers to the information provided by the companies in the advertisement is trustworthy and reliable. The level of trust depends on the review ratings about the products by customers are unbiased (Park and Lee, 2009; Mudambi and Schuff, 2010). When there is no difference between the product quality regardless of being purchased online or offline, consumers perceive the product is trustworthy. Social influence combined with trust is likely to influence the user behavior. Consumers who prefer variety seeking tend to get influenced when they feel trust in the information provided by companies in the websites.

In addition to trust, factors relating to product also play a major role in influencing the user behavior. When customer ratings about the products in the digital world such as social media, shopping sites and forums are positive, consumers tend to get influenced to purchase products. Sometimes consumers view the videos from experts or expert blogs and get an idea of product quality and reliability. Online buying behavior depends on the reliability of information about the product through various sources. The relationship between advertising and user behavior is influenced by product features. At the same time, convenience on buying online is enhanced when product factors are favorable (Wang *et al.*, 2005; Jayawardhena *et al.*, 2007; Forsythe *et al.*, 2006). Based on the above, we hypothesize:

H1a. Trust positively moderates the relationship between social influence and user behavior.

H2a. Trust positively moderates the relationship between variety seeking and user behavior

H3a. The relationship between advertising and user behavior will be positively moderated by product factors.

H4a. The relationship between convenience and user behavior will be positively moderated by product factors.

2.3 Mediation hypothesis

We also postulate that user behavior mediates the relationship between the antecedents of user behavior and customer satisfaction. Though it is possible that convenience, social influence, advertising, product features and trust may have a direct relationship with customer satisfaction, but it is more likely that user behavior is a precondition before actually consuming products. Intuitively, it is suggested that user behavior is a mediator in the relationship between antecedents of user behavior and customer satisfaction. Therefore, we hypothesize:

H8. User behavior mediates the relationship between antecedents of user behavior and customer satisfaction.

The conceptual model is presented in Figure 1.

3. Method

3.1 Survey instrument

To conduct this research, a structured survey instrument is devised after drawing the variables and respective indicators from literature review. In total, there are eight constructs, two of which are dependent variables and two of which are moderators. Before collecting the data, the minimum required sample size is calculated using the following formula:

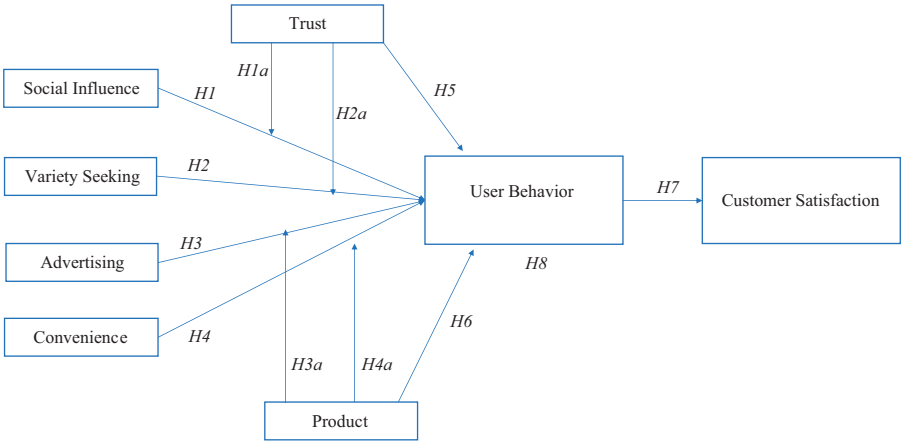

Figure 1.
Conceptual model

Sample size = Z^2 * (p) * (1-p) / c 2

where

Z = Z value (e.g. 1.96 for 95% confidence level)

p = percentage picking a choice, expressed as decimal (0.5 used for sample size needed)

c = confidence interval, expressed as decimal (e.g., 0.05)

Following this, the required sample size = (1.96)2 x (0.5)(0.5) / (0.05)2 = 384

The number of respondents in this research was 556 > 384; therefore, the required minimum sample size criterion is satisfied. Data were collected from information technology (IT) employees of three cities viz Hyderabad, Chennai and Bangalore.

Of the respondents, 413 were male (74%) and 141 (26%) were female; 336 (60.4%) of the respondents had undergraduate diploma (i.e. bachelor's degree), 192 (34%) had graduate diploma (i.e. master's degree), 10 had doctoral degree and 18 had non-professional degrees. As far as employment is concerned, around 334 (60%) are employees in IT field, and 222 (40%) are self-employed. About the devices used for online shopping, 112 (20%) responded that they used desktop or laptop, 419 (75%) used mobile app and 23 (4%) used mobile browser. About 180 (32.37%) belonged to the age group of 21–25 years, 160 (28.77%) were between 26 and 30 years of age, 104 (18.70%) between 31 and 35 years, 74 (13.30%) between 36 and 40, 26 (4.6%) between 41 and 45 years of age and 12 (2.1%) were between 46 and 50 years of age.

3.2 Measures

3.2.1 Independent variables. The independent variables were measured using Likert-five-point scale ("1" representing "strongly disagree"; and "5" representing "strongly agree"). These measures were drawn from the literature.

Social influence was measured using six items. The sample items read as "I shop based on social media feeds or posts (Instagram, WhatsApp status, Facebook posts, Twitter)," and "I use online forums and online communities for acquiring information about a product". The reliability coefficient for social influence was 0.868. *Variety seeking* was measured using three items and sample item reads as "I browse online shopping stores to know what is in trend now." The reliability coefficient for variety seeking measure was 0.769. *Advertising* was measured using four items and sample item reads as "Advertisements provides complete information on a product." The reliability coefficient for advertising was 0.766. *Convenience*

was measured using three items and sample item reads as "I shop mostly through online since its available round the clock." The reliability coefficient for convenience was 0.796. *Trust* was measured using four items. The sample items read as "There is no difference between the product quality regardless of being purchased online or offline," and "Product information given by the provider is verified and not biased." The reliability coefficient for the trust was 0.86. *Product factors* were measured using three items and sample item reads as "Product belonging to a brand is an obvious to perform well." The reliability coefficient was 0.755.

3.2.2 Dependent variables. The user behavior and customer satisfaction were the dependent variables. User behavior is also considered as a mediator in the present study. *User behavior* was measured using five-item trait buying scale from Weun *et al.* (1998). The sample items read as "When I go online shopping, I buy things that I intended to purchase," and I am not a person who makes unplanned purchases." The reliability coefficient for user behavior was 0.694.

Customer satisfaction was measured using five items adapted from Hallowell (1996). The sample items read as "I am satisfied with online buying," and " I am satisfied with the price I pay for the goods I buy online." The reliability coefficient Cronbach alpha for customer satisfaction was 0.887.

3.3 Confirmatory factor analysis

Table 1 presents the confirmatory factor analysis (CFA) results and measurement properties. Table 2 presents comparison of measurement models. The baseline eight-factor model fitted the data well (χ^2 = 1251.12; df = 459; RMSEA = 0.055; RMR = 0.046; Standardized RMR = 0.050; CFI = 0.921; TLI = 0.909; GFI = 0.878). In addition, we compared a baseline model with seven alternate models. A comparison of these models with the baseline model, presented in Table 2, reveals that the comparative fit index (CFI) for the nine-factor model was 0.92, and the root mean-squared error of approximation (RMSEA) was 0.055. RMSEA of less than 0.08, in general, provides a good fit of the model to the data (Browne and Cudeck, 1993). These goodness of statistics for the eight-factor model render evidence of construct distinctiveness for social influence, variety seeking, convenience, advertising, product, trust, user behavior and customer satisfaction. We further tested for discriminant validity by following the procedures outlined by Fornell and Larcker (1981) and Netemeyer *et al.* (1990), by comparing the variance extracted estimates of the measures with the square of the correlation between constructs. In this study, the variance extracted estimates for seven of the variables exceeded the suggested level of 0.50 and for one of the variables, i.e. user behavior it was little less than 0.50 (Fornell and Larcker, 1981, p. 46). Since the variance extracted estimate exceeded the squared correlation between the variables the measures provided discriminant validity. The variance extracted estimates for convenience and trust were 0.57 and 0.62, respectively, and both exceeded the squared correlation between convenience and trust (Φ_{21} = 0.498, Φ^2_{21} = 0.248; SE of Φ_{21} = 0.03; $p < 0.05$). Moreover, the squared correlation between user behavior and customer satisfaction was lower than the variance extracted estimates of 0.45 and 0.61, respectively (Φ_{21} = 0.563, Φ^2_{21} = 0.316; SE of Φ_{21} = 0.05; $p < 0.05$); the squared correlation between variety seeking and social influence was lower than the variance extracted estimates of 0.53 and 0.60, respectively (Φ_{21} = 0.398, Φ^2_{21} = 0.158; SE of Φ_{21} = 0.05; $p < 0.05$). These statistics, together with the CFA results, offer support for discriminant validity between these eight variables.

3.4 Descriptive statistics

Table 3 captures the means, standard deviations and zero-order correlations.

Our initial analysis of descriptive statistics suggests that the correlations between the variables were low and significant (ranged between 0.158 and 0.61). The highest correlation

Variable	Alpha	Standardized loadings (λ_{yi})	Reliability (λ^2_{yi})	Variance (Var(ε_i))	Average variance-extracted $\Sigma(\lambda^2_{yi})/[(\lambda^2_{yi}) + (\mathrm{Var}(\varepsilon_i))]$
Product factors	0.755				0.51
Product belonging to a brand is an obvious to perform well		0.67	0.45	0.55	
Customer reviews and ratings for products in the digital world (social media, shopping sites, forums)		0.74	0.55	0.45	
Getting to know about products performance through experts (expert blogs, videos from experts)		0.72	0.52	0.48	
Advertising	0.766				0.58
Advertisements provides complete information on a product		0.80	0.64	0.36	
Personalized or targeted advertisements act as a motivator to purchase a product		0.80	0.63	0.37	
Banner ads are distracting but provides useful information regarding products and offers		0.69	0.47	0.53	
Social influence	0.868				0.60
Do you share your purchase online		0.84	0.70	0.30	
Do you purchase when a product is being shared by your friend/relative/ colleague		0.85	0.72	0.28	
Do you shop based on social media feeds or posts (Instagram, WhatsApp status, Facebook posts, Twitter)		0.86	0.74	0.26	
I use online forums and online communities for acquiring information about a product		0.54	0.29	0.71	
If I am offered a reward for sharing my purchase, I would share them in social media		0.75	0.56	0.44	
Variety seeking	0.769				0.53
I browse online shopping stores to window shop at your leisure		0.71	0.50	0.50	
I prefer online stores than offline stores due to broad availability of product ranges		0.72	0.51	0.49	

(*continued*)

Table 1. Results of confirmatory factor analysis and measurement properties

Variable	Alpha	Standardized loadings (λ_{yi})	Reliability (λ^2_{yi})	Variance (Var(ε_i))	Average variance-extracted $\Sigma(\lambda^2_{yi})/[(\lambda^2_{yi}) + (\mathrm{Var}(\varepsilon_i))]$
I browse online shopping stores to know what is in trend		0.76	0.57	0.43	
Convenience	0.796				0.57
Placing orders from anywhere		0.71	0.51	0.49	
I shop mostly through online since its available round the clock		0.80	0.63	0.37	
Low and reliable shipping		0.75	0.56	0.44	
Trust factors	0.860				0.62
There is no difference between the product quality regardless of being purchased online or offline		0.68	0.46	0.54	
Product information given by the provider is verified and not biased		0.86	0.74	0.26	
Assured list of third party sellers within the online provider		0.84	0.70	0.30	
Online provider ensures that customer reviews and ratings are not biased		0.75	0.56	0.44	
User behavior	0.772				0.45
When I go online shopping, I buy things that I intended to purchase		0.73	0.54	0.46	
I am not a person who makes unplanned purchase		0.62	0.38	0.62	
I avoid buying things that are not on my shopping list		0.64	0.41	0.59	
I often buy things that I need		0.69	0.48	0.52	
Customer satisfaction	0.887				0.61
I am satisfied with buying products online		0.80	0.64	0.36	
I am satisfied with the price, I pay for the goods that I buy online		0.74	0.54	0.46	
I am satisfied with the online store for providing better service after purchase		0.82	0.67	0.33	
I am satisfied with the customer care while and after buying online		0.76	0.57	0.43	
I am satisfied with delivery of product after buying online		0.80	0.64	0.36	

Table 1.

was between social influence and advertising ($r = 0.61$). The minimum correlation between social influence and convenience was 0.158. Kennedy (1979) suggests that correlations of 0.8 or higher may be problematic from the viewpoint of multicollinearity. In this research, all the

Model	Factors	χ^2	df	$\Delta\chi^2$	RMSEA	RMR	Standardized RMR	CFI	TLI = NNFI	GFI
Null		10590.41	528							
Baseline model	Eight factors	1251.12	459		0.055	0.046	0.050	0.921	0.909	0.878
Model 1	Seven factors: Product and advertising were combined into one factor; social influence, variety seeking, convenience, trust, user behavior, and customer satisfaction are other seven factors	1605.02	467	352.90**	0.066	0.058	0.069	0.887	0.872	0.925
Model 2	Six factors: Product, advertising, and social influence were combined into one factor; variety seeking, convenience, trust, user behavior, and customer satisfaction are other six factors	2032.55	474	781.43**	0.076	0.080	0.099	0.845	0.827	0.790
Model 3	Five factors: Product, advertising, social influence, and variety seeking were combined into one factor; convenience, trust, user behavior; and customer satisfaction are other five factors	2536.96	480	1285.84**	0.087	0.094	0.112	0.795	0.775	0.730
Model 4	Four factors: Product, advertising, social influence, variety seeking, and convenience were combined into one factor; trust, user behavior, and customer satisfaction are other four factors	3247.65	485	1996.53**	0.101	0.106	0.112	0.725	0.701	0.636
Model 5	Three factors: : Product, advertising, social influence, variety seeking, and convenience, were combined into one factor; trust, user behavior, and customer satisfaction are other three factors	3596.79	489	2345.67**	0.107	0.122	0.100	0.691	0.666	0.609
Model 6	Two factors: : Product, advertising, social influence, variety seeking, convenience, and trust were combined into one factor; user behavior, and customer satisfaction are other two factors	3911.87	492	2660.75**	0.112	0.122	0.101	0.660	0.635	0.594
Model 7	One factor: Product, advertising, social influence, variety seeking, convenience, trust, and user behavior, and customer satisfaction were combined into one factor	4202.14	494	2951.02**	0.116	0.126	0.106	0.631	0.606	0.582

Note(s): $^{**}p < 0.01$

Table 2.
Comparison of measurement models

correlations between the variables were less than 0.8, and hence multicollinearity is not a problem. Further, we performed a statistical check for multicollinearity using the variance inflation factor (VIF) for each independent variable. The VIF values ranged between 2.205 (for convenience) to 1.740 (social influence). Since the VIF for the variables is less than 5, there is a support that multicollinearity is not a problem (Hair *et al.*, 2011).

3.5 Hypothesis tests

Hierarchical regression results of user behavior as dependent variable are presented in Table 4.

As shown in model 1 of Table 4, the control variables were entered into the equation. The results show that all the control variables viz., age ($\beta = -0.07$, $p = 0.17$), gender ($\beta = -0.05$, $p = 0.25$) and income ($\beta = -0.08$, $p = 0.09$) were not significant. The model was significant and explained 29.8% variance in the dependent variable, i.e. job satisfaction because of control variables ($R^2 = 0.017$ adjusted $R^2 = 0.011$; $F = 3.136$, $p < 0.05$).

To test hypotheses 1 through 6, we entered main variables into the equation (column 2 from Table 4). The beta coefficients of social influence ($\beta = 0.15$, $p < 0.001$), variety seeking ($\beta = 0.14$, $p < 0.05$), advertising ($\beta = 0.11$, $p < 0.05$), convenience ($\beta = 0.13$, $p < 0.05$), trust ($\beta = 0.21$, $p < 0.001$) and product ($\beta = 0.103$, $p < 0.05$) were significant. The main effects model was significant ($R^2 = 0.393$, adjusted $R^2 = 0.383$; $F = 39.311$, $p < 0.001$; $\Delta R^2 = 0.376$; and $\Delta F = 59.45$, $p < 0.001$). These results support H1 through H6 that (1) social influence, (2) variety seeking, (3) advertising, (4) convenience, (5) trust and (6) product are positively and significantly related to user behavior.

To test moderation hypotheses H1a through H4a, we entered moderating variables, i.e. interaction terms (trust and product) in step 3 (column 3) of Table 4. Regression coefficients of the main effects of all the variables were significant except for trust. The regression coefficient of interaction term (i.e. social influence x trust) was significant ($\beta = 1.02$, $p < 0.001$), thus supporting H1a that trust acts as a moderator in the relationship between social influence and user behavior. The regression coefficient of interaction term (i.e. variety seeking x trust) was also significant ($\beta = -0.37$, $p < 0.05$), thus supporting H2a that trust moderates the relationship between variety seeking and user behavior. Further, the regression coefficient of the interaction term (i.e. advertising x product) was significant ($\beta = -0.65$, $p < 0.05$), thus supporting the H3a that product moderates the relationship between advertising and user behavior. Finally, the regression coefficient of the interaction term (i.e. convenience x product) was significant ($\beta = -0.64$, $p < 0.05$), thus supporting H4a that product moderates the relationship between convenience and user behavior. The interaction model was significant and explained 43.0 % variance in user behavior because of main and

Table 3.
Descriptive statistics: means, standard deviations and correlations

	Mean	SD	1	2	3	4	5	6	7	8
1. Social influence	3.38	0.93	1							
2. Variety seeking	3.85	0.74	0.40***	1						
3. Advertising	3.65	0.76	0.61***	0.48***	1					
4. Convenience	4.08	0.71	0.16***	0.58***	0.27***	1				
5. Trust	3.66	0.79	0.42***	0.45***	0.52***	0.49***	1			
6. Product	4.01	0.66	0.35***	0.42***	0.43***	0.45***	0.49***	1		
7. User behavior	3.80	0.64	0.43***	0.47***	0.47***	0.41***	0.51***	0.48***	1	
8. Customer satisfaction	3.87	0.69	0.28***	0.51***	0.36***	0.60***	0.57***	0.51***	0.56***	1

Note(s): **Correlation is significant at the 0.01 level (2-tailed)

Variables Dependent variable—→	Column 1 User behavior Step 1	Column 2 User behavior Step 2	Column 3 User behavior Step 3
Control variables			
Age	−0.07 (−1.37; 0.17)	0.001 (0.02; 0.98)	−0.02 (−0.43; 0.66)
Gender	−0.05 (−1.13; 0.25)	−0.02 (−0.48; 0.63)	−0.02 (−0.46; 0.64)
Income	−0.08 (−1.69; 0.09)	−0.05 (−1.19; 0.23)	−0.05 (−1.14; 0.25)
Main variables			
Social influence		0.15*** (3.43; 0.001)	0.52*** (3.35; 0.001)
Variety seeking		0.14** (3.05; 0.002)	0.32*** (3.38; 0.001)
Advertising		0.11** (2.40; 0.02)	0.54** (2.64; 0.008)
Convenience		0.13** (2.73; 0.006)	0.50** (2.70; 0.007)
Trust		0.21*** (4.66; 0.000)	−0.02 (−0.14;0.88)
Product		0.103** (2.49; 0.013)	0.76*** (4.36; 0.000)
Moderator variables			
Social influence x Trust			1.02*** (4.60; 0.000)
Variety seeking x Trust			−0.37** (−2.23; 0.026)
Advertising x Product			−0.65** (−2.20; 0.029)
Convenience x Product			−0.64** (−2.15; 0.032)
R^2	0.017	0.393	0.430
Adj R^2	0.011	0.383	0.416
ΔR^2		0.376	0.036
F	3.136**	39.311***	31.39***
ΔF		56.45***	8.629***
Df	3,552	9,546	13,542

Note(s): Standardized regression coefficients are reported; "t" values, and "p" values are in parenthesis. ***$p < 0.001$; **$p < 0.05$

Table 4. Hierarchical regression results of moderating effect of trust and product in the relationship between antecedents and user behavior

interaction variables ($R^2 = 0.43$, adjusted $R^2 = 0.416$; $F = 31.39$, $p < 0.001$; $\Delta R^2 = 0.036$; and $\Delta F = 8.629$, $p < 0.001$).

To test H7 that user behavior has a positive effect on customer satisfaction, hierarchical regression is performed, and results were mentioned in Table 5.

As can be seen in Table 5, control variables (age, gender and income) were entered in step 1 (column 1), and the results show that none of the control variables were significant. When main variable user behavior was entered in step 2 (column 2), the regression coefficient of user behavior was positive and significant ($\beta = 0.57$, $p < 0.001$). The model is significant and explained 32.4% variance in customer satisfaction because of user behavior ($R^2 = 0.324$, adjusted $R^2 = 0.319$; $F = 66.08$, $p < 0.001$; $\Delta R^2 = 0.318$; and $\Delta F = 259.4$, $p < 0.001$). These results support hypothesis 7 that user behavior is positively and significantly related to customer satisfaction.

In column 3 (Table 5), we also entered all other independent variables to see their direct effect on customer satisfaction. The results reveal that user behavior ($\beta = 0.26$, $p < 0.001$), variety seeking ($\beta = 0.10$, $p < 0.05$), convenience, ($\beta = 0.27$, $p < 0.001$), trust ($\beta = 0.21$, $p < 0.001$) and product ($\beta = 0.17$, $p < 0.001$) are significantly and positively related to customer satisfaction. Social influence ($\beta = -0.02$, ns) and advertising ($\beta = -0.06$, ns) do not have any effect on customer satisfaction. The model is significant and explained 54.3% of variance in customer satisfaction because of independent variables including user behavior ($R^2 = 0.543$, adjusted $R^2 = 0.535$; $F = 64.87$, $p < 0.001$; $\Delta R^2 = 0.219$; and $\Delta F = 43.60$, $p < 0.001$).

To test the mediation effect of user behavior (hypothesis 8), it is important to consider the moderation mediation analysis. There are two types of moderated mediation analysis

Variables Dependent variable—→	Column 1 Customer satisfaction Step 1	Column 2 Customer satisfaction Step 2	Column 3 Customer satisfaction Step 3
Control variables			
Age	−0.08 (−1.69; 0.09)	−0.05 (−1.11; 0.26)	−0.04 (−1.05; 0.29)
Gender	−0.04 (−0.87; 0.38)	−0.01 (−0.28; 0.77)	0.03 (0.81; 0.42)
Income	0.05 (1.05; 0.29)	0.10* (2.42; 0.015)	0.08** (2.34; 0.02)
Mediator			
User behavior		0.57*** (16.10; 0.000)	0.26*** (7.11, 0.000)
Social influence			−0.02 (−0.44; 0.65)
Variety seeking			0.10** (2.48; 0.013)
Advertising			−0.06 (−1.44; 0.15)
Convenience			0.27*** (6.64; 0.000)
Trust			0.21*** (5.30; 0.000)
Product			0.17*** (4.70; 0.000)
R^2	0.006	0.324	0.543
Adj R^2	0.001	0.319	0.535
ΔR^2		0.318	0.219
F	1.118	66.08***	64.85***
ΔF		259.40***	43.60***
Df	3,552	4,551	10,545

Note(s): Standardized regression coefficients are reported; "t" values, and "p" values are in parenthesis. ***$p < 0.001$; **$p < 0.05$

Table 5.
Hierarchical regression results of effect of user behavior on customer satisfaction

(1) where the moderation occurs between the independent variables and mediation variable, and (2) the moderation occurs between the mediator and the dependent variable (Langfred, 2004). In this research, moderation occurs between the independent variables and the mediator, and to test the hypotheses we followed the procedures outlined by Korsgaard *et al.* (2002). To demonstrate mediation, three conditions are necessary. First, the independent variables (social influence, variety seeking, advertising and convenience) are significantly related to user behavior. The interaction terms (Social influence x trust, variety seeking x trust, advertising x product, convenience x product) must be entered into the equation. Based on column 3 of Table 2, social influence ($\beta = 0.52, p < 0.001$), variety seeking ($\beta = 0.32, p < 0.001$), advertising ($\beta = 0.54$, $p < 0.05$), convenience ($\beta = 0.50$, $p < 0.05$) and product ($\beta = 0.76$, $p < 0.001$) are significantly and positively related to user behavior and trust ($\beta = -0.02$, $p = 0.88$) is not related to user behavior, and hence condition 1 is satisfied.

Second condition is that independent variables are significantly and positively related to customer satisfaction; again, the interaction terms must be included in the equation. Based on Table 4 and model 1, social influence ($\beta = -0.18$, $p = 0.20$) and advertising ($\beta = 0.24$, $p = 0.21$) are not significantly related to customer satisfaction whereas variety seeking ($\beta = 0.24, p < 0.05$), convenience ($\beta = 0.36, p < 0.05$), trust ($\beta = 0.26, p < 0.05$) and product ($\beta = 0.44, p < 0.05$) are significantly and positively related to customer satisfaction. Thus, condition 2 is satisfied. The third condition is that when user behavior is included in the full equation, the relationships between independent variables and customer satisfaction become no longer significant. Since there is no direct effect of social influence and advertising on customer satisfaction, there is no need to check for mediation of user behavior.

Based on model 2 of Table 6, the results reveal that the regression coefficients for variety seeking ($\beta = 0.16$, ns), convenience ($\beta = 0.22$, ns), trust ($\beta = 0.26$, $p < 0.05$) and product ($\beta = 0.25$, ns). These results suggest that user behavior is partially mediating the relationship between trust and customer satisfaction, i.e. trust has both direct and indirect effect on

Variables Dependent variable—→	Column 1 Customer satisfaction Step 1	Column 2 Customer satisfaction Step 2
Control variables		
Age	−0.04 (−1.15; 0.25)	−0.04 (−1.07; 0.28)
Gender	0.02 (0.68; 0.49)	0.03 (0.84; 0.39)
Income	0.07 (1.88; 0.06)	0.08** (2.27; 0.023)
Main effects		
Social influence	−0.18 (−1.28; 0.20)	−0.05 (−0.37; 0.71)
Variety seeking	0.24** (2.71; 0.007)	0.16 (1.85; 0.06)
Advertising	0.24 (1.25; 0.21)	0.09 (0.54; 0.59)
Convenience	0.36** (2.08; 0.04)	0.223 (1.38; 0.17)
Trust	0.26** (2.02; 0.04)	0.26** (2.14; 0.033)
Product	0.44** (2.73; 0.007)	0.25 (1.56; 0.12)
Interaction effects		
Social influence x Trust	0.32 (1.55; 0.12)	0.06 (0.29; 0.77)
Variety seeking x Trust	−0.21 (−1.38; 0.17)	−0.12 (−0.79; 0.43)
Advertising x Product	−0.40 (−1.45; 0.15)	−0.23 (−0.88; 0.38)
Convenience x Product	−0.10 (−0.36; 0.72)	0.06 (0.24; 0.81)
Mediator		
User behavior		0.26*** (6.65; 0.000)
R^2	0.508	0.545
Adj R^2	0.496	0.533
ΔR^2		0.037
F	43.02***	46.30***
ΔF		44.24***
Df	13,542	14,541

Note(s): Standardized regression coefficients are reported; "t" values, and "p" values are in parenthesis. ***$p < 0.001$; **$p < 0.05$

Table 6. Results of full mediation analysis of user behavior on customer satisfaction

customer satisfaction. The mediation model is significant and explains 54.5% variance in the customers satisfaction because of the independent variables and also mediator ($R^2 = 0.545$, adjusted $R^2 = 0.533$; $F = 46.30$, $p < 0.001$; $\Delta R^2 = 0.037$; and $\Delta F = 44.24$, $p < 0.001$).

To show the moderation effects, we plotted the interaction graphs (See Figures 2–5).

Figure 2 shows trust as a moderator in the relationship between social influence and user behavior. As can be seen in the figure, at high levels of trust, the relationship between social influence and user behavior is stronger than at lower levels of trust. Further, as the social influence is increasing from "low" to "high," the relationship between social influence and user behavior becomes more stronger at high levels of trust than at low levels of trust. These results support H1a.

Figure 3 shows trust as a moderator in the relationship between variety seeking and user behavior. As can be seen in the figure, the relationship between variety seeking and user behavior is stronger for high levels of trust than at low levels. Further, higher levels of variety seeking are associated with increase in user behavior than at lower levels of variety seeking when trust is "high" than when trust is "low." These results support H2a.

Figure 4 shows product factors as moderator in the relationship between advertising and user behavior. As can be seen, advertising is associated strongly with user behavior at both lower and higher levels when product factors are higher than at lower level. Further, when advertising is increasing from "low" to "high," the relationship between advertising and user behavior becomes stronger when product factors increase from "low" to "high," and these results support H3a.

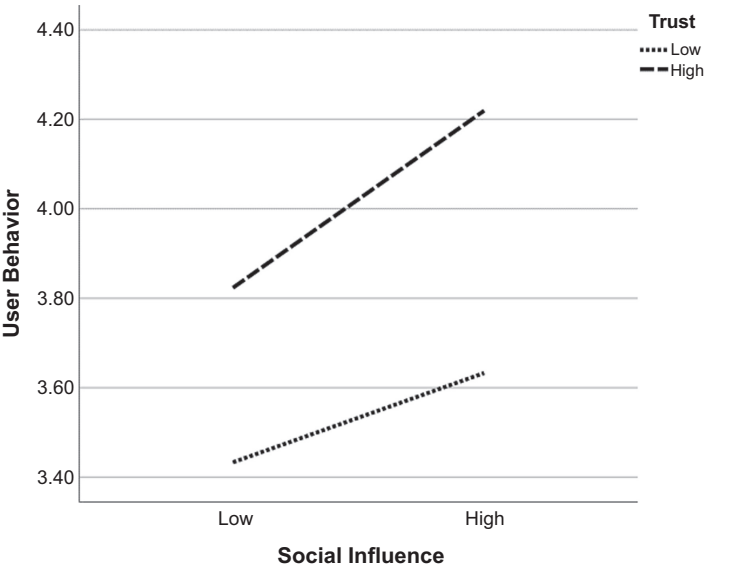

Figure 2.
Trust as a moderator in the relationship between social influence and user behavior

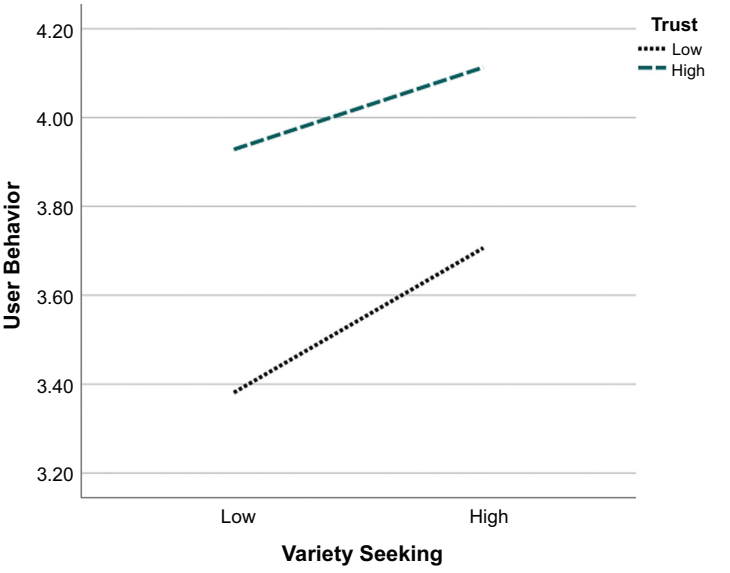

Figure 3.
Trust as a moderator in the relationship between variety seeking and user behavior

Figure 5 shows product factors as a moderator in the relationship between convenience and user behavior. At higher levels of product factors, convenience is strongly associated with user behavior than at lower levels of product factors. Further, when convenience is increasing from "low" to "high" are associated with higher levels of user behavior when product factors increase from "low" to "high." These results support H4a.

Summary of the findings of the hypotheses was presented in Table 7

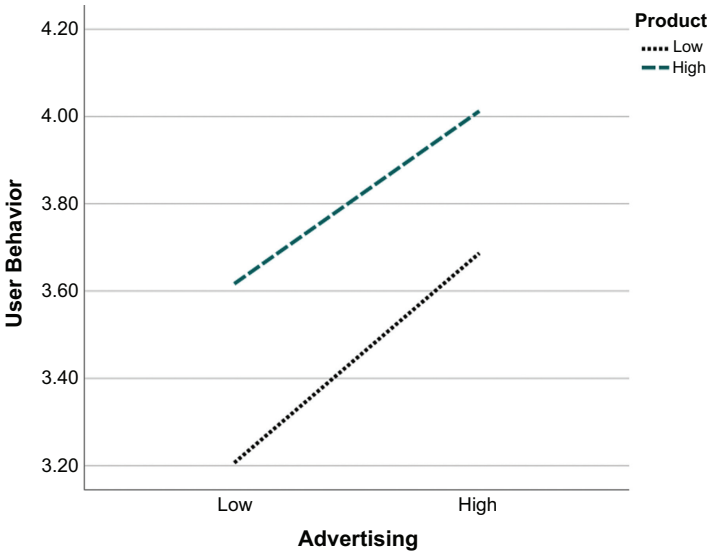

Figure 4.
Product as a moderator in the relationship between advertising and user behavior

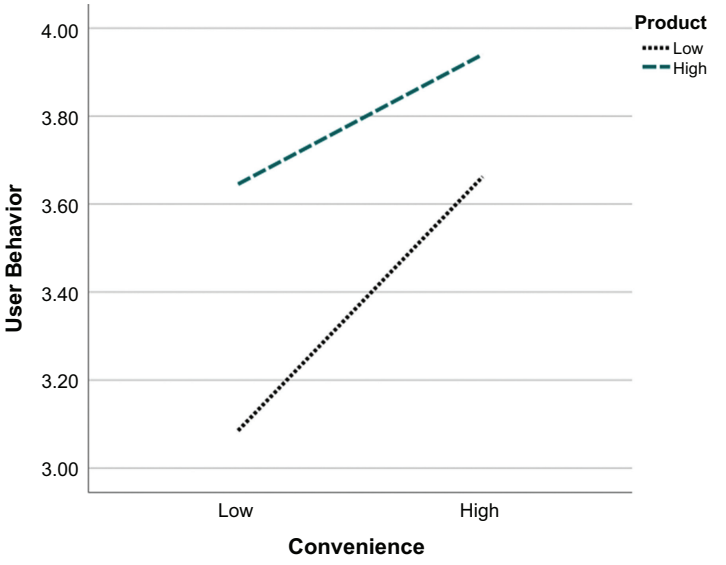

Figure 5.
Product as a moderator in the relationship between convenience and user behavior

4. Discussion

Internet revolution two decades back contributed to the increasing online shopping by consumers all over the world (Johnson *et al.*, 2001). Increase in e-commerce has resulted in several studies identifying the factors of changing consumer behavior. While most of the studies were carried in Western world, relatively small number of studies focused in India. India being one of the thickly populated country and is on the bottom of the pyramid (with regard to consumer market), marketers were trying to evolve strategies to capture this huge

Hypotheses	Result
H1: Social influence is positively related to user behavior	Supported
H2: Variety seeking is positively associated with user behavior	Supported
H3: Advertising is positively related to user behavior	Supported
H4: Convenience is positively associated to user behavior	Supported
H5: Trust is positively related to user behavior	Supported
H6: Product factors are positively associated with user behavior	Supported
H7: User behavior is positively related to customer satisfaction	Supported
H8: User behavior mediates the relationship between antecedents of user behavior and customer satisfaction	Partial mediation supported
H1a: Trust positively moderates the relationship between social influence and user behavior	Supported
H2a: Trust positively moderates the relationship between variety seeking and user behavior	Supported
H3a: The relationship between advertising and user behavior will be positively moderated by product factors	Supported
H4a: The relationship between convenience and user behavior will be positively moderated by product factors	Supported

Table 7.
Summary of the hypotheses findings

market. The present study is conducted with underlying objective of identifying the potential antecedents of user behavior of online shoppers and test the conceptual model developed. Data were gathered from three important cities in the southern part of India (Hyderabad, Chennai and Bangalore) from employees working in IT. As employees in IT were more careful about the risks of online shopping (e.g. online fraud of accounts), we expect that they are more likely engage in online shopping than people who have limited knowledge of risks of online shopping.

The present study reveals that (1) social influence, (2) variety seeking, (3) advertising, (4) convenience, (5) trust and (6) product are positively and significantly related to user behavior. The results also support, consistent with previous research, that user behavior is significantly and positively related to customer satisfaction. Finally, the trust acts as a moderator in the relationship between (1) social influence and user behavior, and (2) variety seeking and user behavior. Further, product features act as a moderator in the relationship between (1) advertising and user behavior, and (2) convenience and user behavior.

4.1 Limitations

The results from the present study should be interpreted in light of limitations. First, as with any research in social sciences, common method bias is a potential problem. Though the problem of common method cannot be completely eliminated, these can be minimized by following the procedures outlined by Podsakoff *et al.* (2003). We did check the internal validity of the instrument by comparing various models and documented that eight-factor model yielded best results (the results were presented in Table 2). Another problem associated with survey research is "social desirability bias." To minimize this bias, we maintained anonymity of the survey results and ensured that no one will have access to the data. Third problem is about generalizability of the results from the present study. India is a country having several cosmopolitan and metropolitan cities, and it is difficult to capture the entire population. We selected three major cities from the southern part of India (viz., Hyderabad, Chennai and Bangalore) as these cities constitute the IT hub in the country. Our sample consisted of employees in the IT sector, and hence it is difficult to generalize the results across all other consumers. However, to the extent the consumers' behavior remains same, the results are expected to be generalizable. In one study where the researchers focused

on three cities in the northern part of India, having a different model of online shopping, our research is little different in the sense we identified moderating variables in our model. Since most of the previous studies focused on the relationship between demographic variables and user behavior, we used the demographics as control variables in our study. Lastly, the present study does not take into account the impact of "price" and "price discounts" offered by companies. One of the reasons for not including these is that the inverse relationship between price and demand was established by scholars in microeconomics long back. However, price discounts, coupons, buy-one-get-one offers and coupons may have profound influence on consumer behavior. Further researchers may throw light on these variables to see if the relationships between the variables we studied in the present model would change.

4.2 Managerial implications

The study has implications for the practicing managers. Marketers need to understand that consumers prefer variety and convenience, and hence make different types of products are available online. Social media is playing an important role in influencing consumers and any complaint against the products offered will have deleterious effect on the online sales. Managers need to ensure that quality of product is unquestionable and satisfactory to the consumers. User behavior is also influenced by the trust of the websites and consumers must be ensured of safety of the online transactions. If companies use the information provided by consumers (either through credit cards, debit cards), it results in betrayal of trust and may result in loss of sales. Customer satisfaction is directly related to user behavior, which in turn, depends on the trust and product factors, in addition to variety and convenience and managers should ensure safety and security of online transactions. To have sustained competitive advantage, it is necessary for the managers to consider secrecy of online transactions. If companies are careless in dealing with online customers, be in terms of after sales service, or return-policy of items, it is quite likely that they lose customer base and eventually collapse. Once trust is lost, it is difficult to regain and therefore managers should take all the steps necessary to ensure customer satisfaction. Finally, the effectiveness of online shopping also depends on the availability of websites 24/7. It is therefore necessary for the managers to periodically maintain websites and see that latest information is available to the consumers.

4.3 Contributions and future research

The present study contributes to marketing literature in two ways. First a conceptual model was developed and tested, particularly in the context of India. While previous researchers focused on the impact of demographics on user behavior, the present research goes one step beyond by identifying the potential antecedents of user behavior. Second, the moderating role of product factors and trust is examined in the relationship between the antecedents and user behavior. The results from the present study are consistent with existing research carried in Western part of the world. The present study offers several avenues for future research. We did not examine the effect of personality factors of consumers on user behavior. The present study focused on three major cities in the southern part of India (Bangalore, Hyderabad and Chennai) and the sample selected was from IT sector. We selected the employees from IT sector because they are more aware of the pros and cons of online shopping. It will be interesting to see how rural consumers engage in online shopping, especially in Indian context. Since rural customers stay in villages and are not familiar with online shopping, it would be interesting to see what percentage of rural consumers engage in online transactions and how they feel about online shopping. Most of the time, rural consumers visit nearby towns or cities for making major purchases, and it would be interesting to study their behavior with regard to online shopping.

4.4 Practical implications for Asian business

The results from the present study have several practical implications for businesses operating in Asian region. First, increase in consumers' preferences online purchases provides opportunities for businesses to tap the latent market in India which represents the bottom of the pyramid. Second, user behavior is influenced by the quality of product and the level of trust they have on organizations, it is necessary to provide after-sales service to customers engage in online shopping. Third, managers should be aware that, to cater to the needs of variety-seeking customers, they increase the availability of several models and spend some money on research and development to launch new and variety products. Fourth, customer satisfaction largely depends on their user behavior, which in turn, depends on convenience, it is necessary for the organizations to deliver products without much loss of time. Most often, organizations take around one week to ten days to deliver the product ordered by consumers. It would be better if the product ordered is delivered in shortest possible time to enhance customer satisfaction. Since the present research is conducted in India, eliciting the consumer behavior, most of the Asian businesses are in close proximity when compared to Western countries, consumers expect the product delivered quickly. Finally, managers should realize that quality of a product plays a vital role in consumer satisfaction, and hence quality control programs are effectively implemented.

4.5 Conclusion

As online shopping is rapidly increasing, it is imperative for the organizations to study the antecedents of user behavior and its consequences. The present study is aimed at unraveling some of the antecedents and potential moderators in the relationships. Since the focus was on customers from India, the future researchers need to focus on the consumer behavior in rural population. Now with COVID-19 global pandemic, online shopping has been increasing at a rapid pace and more studies are needed to capture the consumer behavior during and post-global pandemic. Some of the latest studies found that online shopping (e-shopping) has also resulted in increase in impulse buying (Abdelsalam *et al.*, 2020; Verma and Singh, 2019). As user behavior is undergoing significant changes in the present day post-COVID global pandemic, more and more studies are needed to unravel these changes. In addition to trust and product factors, it is necessary to examine the impulse buying of e-shoppers, changing strategies of companies to lure the customers in the present competitive landscape. The pandemic calls for incorporating resilience into strategic planning by companies to meet the changing demands of consumers. We conclude that studies on user behavior continue and help marketers to change their strategies to satisfy the consumers' needs and secure sustained competitive advantage.

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