



Measurement of factors influencing online shopper buying decisions: A scale development and validation

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ABSTRACT

The paper attempts to develop an 'Online Susceptibility Scale' (OSS) by focusing on the factors that influence shopper buying decisions in an online environment as they are not adequately addressed in the literature. The proposed scale supports the understanding of the impact of online information which leads to consumer decisions. The study involves qualitative and quantitative studies to develop the scale. Eleven items are identified for the scale development which were borrowed from literature and modified through focus group discussions. Exploratory Factor Analysis (EFA) resulted in three factor groups: *Evidential online influence* (five items), *Confirmational online influence* (three items), and *Experiential online influence* (three items). Confirmatory Factor Analysis (CFA) has validated the factor structure. Results indicate that the three factors explaining online information sources have a significant impact during buyer purchase decision-making. The study relates 'Online Susceptibility Scale' (OSS) to online retailers for exploring the online shopping influences, thereby managing their campaigns accordingly. Managerial and theoretical implications of this new scale are discussed.

1. Introduction

The sources of information the consumer searches for in the online environment which result a purchase decision is of interest in the internet based electronic commerce. This shopping style is growing swiftly with the proliferation of electronic retailers, online marketplaces, and the increased reach of internet. With increasing online shopping, retailers need to understand how shopper decisions are influenced online (Pookulangara and Koesler, 2011). Many studies have addressed shoppers' purchase behavior through conventional approaches using the reference group influence scale that supports validating consumers' product or brand choice. Few studies deliberate on what sources of online information a consumer searches for while making in a purchase decision. This might be an alternative route leading the shopper towards product or brand choice in an online environment.

The concept of consumer behaviour indicates that a consumer conforms to the social norms or the group's behaviour as a part of a social decision-making process (Xihao and Yang, 2007; Wood and Hayes,

2012). Such norms provide consumers with social cues which are vital influences in shaping their behavior (Xihao and Yang, 2007). These influences are through a 'Reference Group' (RG) that supports adopting a certain lifestyle, attitude, and value formation in turn influencing an individual's self-concept (Bearden and Etzel, 1982). These actions of consumers are a result of their self-verification and self-enhancement which are the two basic motivations that shape their product and brand choice (Stuppy et al., 2020). It appears that marketers have realized that the influence of social RG impacts on consumer decision-making (Wood and Hayes, 2012). Family, social class, cultures, and subculture contribute towards such social influences (Wood and Hayes, 2012). These influences are also key to the choice of brand as consumers tend to conform to group behaviour (Asch, 1953; Kelman, 1961; Xihao and Yang, 2007). The individual would expect himself to be associated with the referents of a group (Kelman, 1961). The application of the concept of RG under behavioural sciences specifies that an individual is expected to be a part of a group, or aspires to be or not to be a member of the group (Xihao and Yang, 2007) and the consumer may assume the perspectives of the group and behave accordingly (Wood and

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Hayes., 2012).

Attitude and behaviour changes of an individual have also been recognized by the influence of reference groups (RG) (Mehta et al., 2001), which facilitate the process of decision-making and validate a consumers' product or brand choice (Xihao and Yang, 2007). Such groups which influence consumer decision-making are categorized into three forms: informational reference groups (IRG), utilitarian reference groups (URG), and value-expressive reference groups (VERG) (Park and Lessig, 1977). IRG is based on a belief of enhancing one's own knowledge (Kelman, 1961); URG is built on a premise that an individual complies with the expectations of others who are mediators of rewards or punishment (Asch, 1953) and VERG provides a purpose to enhance ones' self-concept (Kelman, 1961). Understanding susceptibility towards RG influence becomes important as it provides the consumers with social cues which ultimately lead towards social power (Burnkrant and Cousineau, 1975). These three forms of influence together form the susceptibility scale (SUSCEP Scale) (Bearden et al., 1989, 1990). Traditionally, purchase of products/service decisions has been influenced by these RGs (IRG, URG and VERG) and this behaviour for purchase of goods and services has been studied (Park and Lessig, 1977; Mehta et al., 2001; Wood and Hayes, 2012; Fernandes and Londhe, 2015). In this traditional/offline context, participants interact with their friends, experts, colleagues, family for respect and peer approval which act as stimuli reinforcing the rationalizations, techniques and definitions of their purchase behavior (Hinduja and Ingram, 2009; Septianto et al., 2020). However, in recent years, traditional RGs have been coupled with internet mediated groups which have become an integral part of consumers' identification and socialization experiences as the online groups' socio-demographically provide an inclusive source of identification comparable to traditional formations (Lehdonvirta and Räsänen, 2011).

The concept of social influences and interpersonal influence can be extended in the online shopping behaviour using Technology acceptance model (TAM) theory. Studies have highlighted the application of the TAM framework amongst the emerging consumers who embrace various mediums of online shopping as a virtual equivalent to shopping. With the increasing use of e-commerce, consumers are being influenced by online sources of information. They are influenced by online sources of information (Lackermair et al., 2013) in addition to traditional influences like friends, relatives, and others (Park and Kim, 2008; Yazdanifard et al., 2011). Sources of online information also influence product and consumer characteristics leading to purchase decision-making (Zhu and Zhang, 2010). Marketers have realized the effectiveness of word of mouth (WOM) being an influencing factor in fostering consumer choice and purchase decisions (Jung and Seock, 2017). Due to the importance of WOM in increasing sales, marketers are taking advantage of the internet by building an online consumer opinion platform, thereby extending the traditional WOM to the online environment in terms of product and service reviews, known as electronic WOM (e-WOM) (Pookulangara, 2011; Yazdanifard et al., 2011). Susceptibility to interpersonal influence in online shopping contexts occurs through e-WOM and online reviews (Septianto and Chiew, 2018; Sharma and Klein, 2020). People tend to judge the merit of these reviews and recommendations of online information, and hence these online shopping influences are the vital source of consumer information (Willemssen et al., 2011).

Extant literature widely discuss how consumers are susceptible to online sources of information and hence the requirement to understand these influences impact on consumer behaviour (Fiore and Kim, 2007; Park et al., 2007; Willemssen et al., 2011). It is also suggested that the sources of information have supported consumers and sellers in validating their product and brand decisions (Aghhekyan-Simonian et al., 2012). Thus, it is evident that online sources of information and experience of shoppers in the online environment influence shoppers' buying behaviour. In addition, reference groups have been thoroughly studied for traditional behaviour in purchase of goods and services (Mehta et al.,

2001; Xihao and Yang, 2007; Fernandes and Londhe, 2015). In addition to those traditional groups, online reviews have been indicated as important sources of information (Fiore and Kim, 2007; Park et al., 2007; Lackermair et al., 2013; Racherla et al., 2012; Zhu and Zhang, 2010; Willemssen et al., 2011). An opportunity for research has been found in understanding the social influence across the online and digital touchpoints as this tactic includes a pervasive desire amongst individuals to comply with the social norm which enables online marketers in soliciting online reviews and recommendations (Argo and Dahl, 2020). E-retail market economics have suggested the effective influence of social influences: peer group influences, social norms etc. (Kumar et al., 2016). Hence, there is a requirement to understand the online reviews' impact on consumer behaviour which has not been adequately addressed in terms of influences on shoppers. Thus, it becomes imperative to validate all these variables and attributes in one measurement scale. Against this background, this research tries to address the basic research objectives indicated below:

- With increasing online shopping, how are shoppers influenced online?
- How does the influence of online information impact consumers' decisions? and
- To propose an Online Susceptibility Scale (OSS) by considering the factors influencing the shopper buying decisions in an online environment.

The research makes some significant contributions. First, this is the pioneering study to reflect upon online information sources that a consumer is susceptible to during this purchase decision. This would help the product managers to launch and design their online promotions accordingly. Second, while studying the influences on buying behaviour, the research proposes Online Susceptibility Scale (OSS) as an original contribution to the consumer research domain. To our best knowledge, no such scale is available to explore the online shopping environment, making that a unique contribution of the study.

The remainder of this paper is structured as follows: Section 2 analyses the review of literature. Section 3 elaborates on the research methodology, data collection and scale development procedures. Section 4 explains the relevant discussions. Section 5 discusses the contributions and the implications of the study. Section 6 provides the conclusion, limitations and future scope for research.

2. Theoretical background and literature review

The study is grounded on basic theoretical tenets of Reference Group theory (RG) and the Technology Acceptance Model (TAM). The Reference Group theory is at the core of sociology where people's behaviours and their attitudes are decisively moulded by the groups they participate in. Although individuals need not participate in these groups, for them to influence their attitude and behaviour, the focus is more on the specification and conditions of membership groups as points of reference (Wood and Hayes., 2012; Shareef et al., 2019). Further, individuals compare themselves to others as points of reference for their individual attitudes and behaviours. These member groups influence individuals and are capable of enunciating group values and norms (Hammerl et al., 2016).

The purpose of the study is to extend the concept of social influences in the online shopping behaviour using Technology acceptance model (TAM) theory. Studies have also argued that the TAM theory is a function of a subjective norm, perceived usefulness of a user, and flow experiences and attitudes of an individual. Subjective norm is primarily captured by analysing the social influences on an individual. The social influence on the TAM behaviour has been acknowledged as requiring further articulation and has shown significant influence on technology acceptance decision-making (Lee et al., 2006). Studies posit that social factors have positively impacted an individual's use of information

technology (Lucas and Fujita, 2000; Venkatesh and David, 2000). The membership groups and the social influences in the online environment include online communities, discussion forums, blogs, and online reviews, which help strengthen the online social interactions and these are considered as social influences influencing the user participation (Hsu and Lin, 2008; Hsu et al., 2013). These acts of sharing are the newer forms of socialization in the technology sphere (Racherla et al., 2012; Hsu et al., 2013). Studies have indicated that social norms directly and significantly influence the intentions and attitudes of a user which suggests that, by applying TAM theory, these can be used to improve online shopping experiences (Hsu et al., 2013). It supports individual adoption behaviour and their voluntary use of technology. The critical mass of users in the online environment act as social influencers, influencing behaviour in technology usage. Research has also posited that TAM has undergone revision and now includes social influence which helps predict usage behaviour of technology by end users (Venkatesh and Davis, 2000).

The online recommendations are the information sources for buyers which could take various forms: friends, family, consumer reports, and mass media. The internet provides a user with an impersonal source of information by offering the typology of a computer-mediated environment which aids consumers in electronic decision-making (Senecal and Nantel, 2004). In the online shopping environments, the information sources can be categorized into personal sources (friends and family) which provide personalized information; personal sources (a renowned expert) which provide non-personalized information (Reinstein and Snyder, 2005); impersonal sources that (recommender system) provide personalized information; and impersonal sources (consumer reports and websites) that provide non-personalized information. These forms of social influence are also called electronic word of mouth (eWOM); a new area in consumer research which mainly emerges from information technologies like the Internet/world-wide web. Websites are also recommendation review sources/platforms which involve manufacturers' websites and third-party websites like comparison shopping, or merchant assessment websites like consumer reports websites (Senecal and Nantel, 2004; Kim et al., 2007; Tata et al., 2020). These review sources are considered as unbiased and are judged to be reliable by shoppers in assessing the review quality and hence have a higher influence on their purchase decision (Tata et al., 2020).

2.1. Online shopping information

Researchers have conceptualized and proposed that online consumer information supports consumer decision-making and makes important observations. Online consumer information is open-ended trying to encapsulate reviewers' general assessments (positive or negative) of the product (Reinstein and Snyder, 2005; Lee et al., 2011; Willemsen et al., 2011; Septianto and Soegianto, 2017). These sources are a popular and important feature that impact the consumers' information processing (Fiore and Kim, 2007). Reviewing such online content would not only lead an individual into purchasing a product but translates into integrative shopping experiences (Fiore and Kim, 2007; Duarte et al., 2018). Unlike traditional retail outlets, online shoppers cannot touch and smell products, so their purchase judgements are based on the information that is available on the website and the available product reviews (Kim et al., 2007). Therefore, online sellers encourage shoppers to evaluate their product experiences online which also works as e-word-of-mouth communication (Park et al., 2007).

Additionally, the product aspects are being reviewed and commented on by large numbers of consumers and, these opinions act as an influencer in the overall opinion of the product (Pookulangara and Koesler, 2011; Yu et al., 2011). This is possible due to the rapid expansion of e-commerce platforms, online market-places which have facilitated consumer search for information online before buying either online or offline (Park et al., 2007; Park and Kim, 2008). However, consumers do look for the advantage of lower prices and want to find the

best price for the products they buy and may often purchase on the internet after having seen the product in a store/offline (Schneider and Zielke, 2020). Extant literature has also posited that search costs of products and services in the online context are much lower when compared to the offline context (Lin et al., 2020). Thus, it helps both consumers in their information processing and marketers in product development, marketing, and customer relationship management (Yu et al., 2011). Further, extant literature noted that internet forums like online marketplaces, e-commerce platforms, and review websites are influential sources of consumer information especially for consumers who search for online information before making a purchase decision (Bickart and Schindler, 2001). Also, the curated (guidance) approach is increasingly favoured by the consumer (Sebald and Jacob, 2018). Accessing online discussions, blogs, and reviews are traditionally used by consumers rather than marketer-generated sources (information available on market-places and websites) for gaining knowledge, sharing personal product experiences and opinions (Pookulangara, 2011). Such sources of information are becoming popular and largely impacting consumer behaviour (Lackermair et al., 2013). Such online forums also offer various advantages including having better source credibility and being more relevant to consumers.

Literature further suggests that online information available to users influences consumers' perception of the quality of the product and that increases product awareness among the consumers (Duan et al., 2008). The research also mentioned that consumers compare online and offline information before making their actual purchases. Customers search for information in the offline environment and then purchase online; this behaviour is called showrooming (Schneider and Zielke, 2020). Online user information not only influences but also increases product sales (Duan et al., 2008). Thus, it is apparent that such online sources of information are critical in shaping the consumers' perception of product quality and creating product sales. Studies on online sources of information have been conducted and adapted under various settings. These settings include online user information on movies' box office performance (Duan et al., 2008), online hotel industry (Vermeulen and Seegers, 2009), consumer reviews/information on sales of books (Chevalier and Mayzlin, 2006). Some of the settings where online information was adopted are discussed next. In a study on online hotel industry, it was reported that online hotel reviews increased the chances of consumers' consideration to the choice of the hotel (Vermeulen and Seegers, 2009). The study also indicated that positive and negative reviews, hotel familiarity, and reviewer expertise (Reinstein and Snyder, 2005) were some of the factors being considered by consumers and such exposure to online reviews (positive/negative) increased the awareness of the hotel (Vermeulen and Seegers, 2009; Lee et al., 2011; Racherla et al., 2012).

Similarly, investigations of consumer online reviews on sales of books suggested that incremental negative reviews are instrumental in decreasing sales in comparison to incremental positive reviews which result in increase in sales (Chevalier and Mayzlin, 2006; Lee et al., 2011). Researchers have stated that traditional WOM and e-WOM have been different. Unlike WOM, e-WOM is measurable as comments or reviews on the product have been written on the websites of the company or seller. Thus, marketers can apply marketing strategies for e-WOM more strategically than to traditional WOM and can overcome the limitations of traditional WOM (Kim et al., 2007; Park and Kim, 2008).

2.2. Online shopping influences

There have been many studies which have shown a relationship between consumer online reviews and sources of online information influencing customers' product purchases (Godes and Mayzlin, 2004; Chevalier and Mayzlin, 2006; Li and Hitt, 2008; Racherla et al., 2012; Lackermair et al., 2013). Online consumer shopping behaviour is persuaded more by the posts by opinion leaders, online reviews, friends

and peers, chatbots and virtual employees thus creating a blend of both social and technology tools (Wang et al., 2011; Chaouli et al., 2016; Grewal and Roggeveen, 2020). Experience has helped consumers in shopping online. Studies have identified 'prior online purchase experience' as a determinant of online shopping intention (Zhu and Zhang, 2010). It was found that the number of online reviews influences the buying decision of a novice consumer as the number of reviews indicates the popularity of the product (Racherla et al., 2012). As noted by Park and Kim (2008), the three factors that impact the consumer information processing are consumers' expertise, number of online reviews, and online review valence (positive or negative). Evidence was found on the effects of negative reviews on consumers where there was stronger effect of negative rather than positive reviews (Ba and Pavlou, 2002; Pavlou and Dimoka, 2006). These results were consistent with extant literature where negative information was more often given precedence over positive reviews when evaluating products and objects although, in certain cases, a mixed set of reviews would elicit a purchase response (Tata et al., 2020). However, negative reviews occupying a smaller section of the total reviews were generally considered to be helpful by consumers (Park and Kim, 2008). Studies indicated that research should focus on the effects of perception of online reviews on the product involvement as consumers rely on reviews for high involvement expensive products (Park and Kim, 2008). Thus, product category (high-tech, low tech) and product type (tangible, intangible) may have an impact on information processing of online consumer comments.

From the marketer's point of view, a trust in and reputation of the firm in the online market can be built through product reviews and ratings which are popular support tools supporting buying decisions in the online space (Lackermair et al., 2013; Kumar et al., 2016). researchers argued that trust in the online environment promotes price premiums and can also act as a mediator in trust formation (Ba and Pavlou, 2002; Pavlou and Dimoka, 2006). When the consumers trust a retailer, their patronage of the retailer increases and this reduces their price search behaviour as they begin if the retailer has lowest prices (Lin et al., 2020). Consumers' perceived trust, perceived value and susceptibility to interpersonal influence shows a positive relationship with consumers' intention towards group buying behaviour (Sharma and Klein, 2020). Reviews and ratings are also important sources of information for consumers. Studies show that increasing postings/consumer online reviews are positively correlated with consumer purchase intentions (Park et al., 2007; Duan et al., 2008). As discussed above on the relevance of consumer online reviews and other sources of information being beneficial to consumers, this information has also been favourable to the marketers. Past research has found that consumer purchase intentions have been primarily guided by the effects of online consumer information which has helped online sellers to better manage their online consumer platform (Park et al., 2007). The evidence of marketers paying attention to reviews and other sources of information is seen in the literature. It was observed that the number of online reviews would enhance a product's popularity and would give an indication of the number of people who have bought the product (Racherla et al., 2012). The study indicated that the quality of online reviews has a positive impact on the purchase intention. Further, this purchase intention would increase as the number of reviews increased. Finally, the study concluded that the consumer purchase intentions would also depend on the involvement of consumers as being low involvement or high involvement (Park et al., 2007).

3. Research methodology

3.1. Scale development

To develop the measurement scale, the paper follows the established

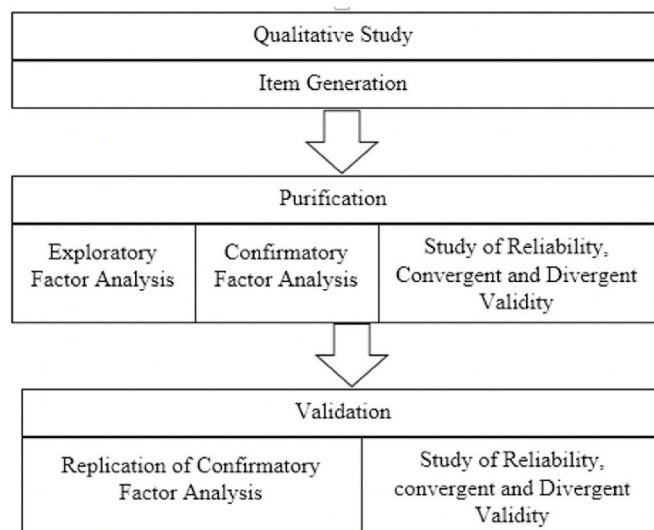


Fig. 1. Scale development steps (Source: Authors).

procedures (Churchill, 1979; Rossiter, 2002): a qualitative study followed by a purification study (a consumer survey) and data validation. Fig. 1 shows the research scheme adopted for the scale development. To execute this, online reference groups have been studied for purchase behaviour of goods and services.

3.2. Qualitative study

The qualitative inquiry involved extant literature and focus group discussions (FGD) for the generation of items that would be relevant in the scale development for understanding online shopping influences. Focus groups play a critical pre-design role and are effectively employed in refining the initial stages of the item generation phase. The development of a scale requires the exploration of the sometimes-contested territories of the stereotypes which help stimulate discussion of attitude among the shoppers (Sweeney and Soutar, 2001; Nassar-McMillan et al., 2010). When the focus of the research is on scale development, the focus group discussions serve as an invaluable process which support gathering data to inform the further steps of the scale-development procedure (Nassar-McMillan et al., 2010).

The items identified through extant literature are reflected in the statements below: In the online shopping environment, it is not only about online reviews that provide information to users, but the number of reviews also important to the shopper. These reviews indeed influence the consumer decision and reflects the product popularity (Park and Kim, 2008; Park et al., 2007). Additionally, both the positive and negative reviews are compared in the online market place (Pavlou and Dimoka, 2006; Park and Kim, 2008; Vermeulen and Seegers, 2009; Lee et al., 2011; Lackermair et al., 2013; Bae and Lee, 2011). In the process of comparing, a few bad reviews may lead to a negative perception for the purchase of the product (Ba and Pavlou, 2002; Pavlou & Dimoka, 2006; Chevalier and Mayzlin, 2006; Park et al., 2007; Lackermair et al., 2013). Also, consumers certainly look for very good reviews before buying a product online/offline (Pavlou and Dimoka, 2006; Park et al., 2007; Park and Kim, 2008; Lackermair et al., 2013). However, in most instances, most of the surveyed participants compared positive and negative reviews and most of the time they would contribute to positive reviews (Lee et al., 2011; Lackermair et al., 2013). Customers' experience has helped them in their shopping experience (Zhu and Zhang, 2010). In addition to the quantity (number) and type of reviews, literature showed that perceived risk and anxiety are crucial factors in the

e-retail environment and therefore shoppers pay attention to the quality of a review (Kim et al., 2007; Bae and Lee, 2011). It is argued that less-involved consumers would be influenced by the quantity of online reviews while more-involved consumers would be influenced by both review quality and review quantity (Park and Kim, 2008). Therefore, the quantity and quality of reviews are important as they provide cues to buying that product. Studies have reported that the quality of reviews reduces the uncertainty of product quality thereby enhancing decision-making (Park et al., 2007; Park and Kim, 2008; Bae and Lee, 2011). Product rating by the customers in the online marketplace is also a popular tool which supports buying decision-making (Lackermair et al., 2013).

The relevant influences in the online environment as prompted by the studies above are:

1. Purchasing Intention increases as the number of reviews increases;
2. A few bad reviews may lead to a negative perception for the purchase of the product;
3. I rely on online reviews for expensive and high involvement products only;
4. I usually compare positive and negative online reviews before buying;
5. I trust the reviews as buying decisions based on reviews has helped me in the past;
6. I do participate in writing reviews once I have made a purchase;
7. The quality of the reviews reduces the uncertainty of product quality and helps me in making my decisions;
8. I certainly look for online blogs/social networking sites to find more information on the product category/brands;
9. I use online reviews for gaining product information for less popular products than popular products; and
10. Ratings for the product are important in buying the product/service.

3.3. Face validity

Face validity assessment of the initial set of an item pool were conducted by expert panel judging where experts from academia and industry aided in validating the items for further analysis. Face validity is a

Table 1
Demographic details.

Sl. No	Description		No. of Respondents	%
1	Gender	Male	230	61.5
		Female	144	28.5
2	Marital Status	Married	242	64.7
		Un-Married	132	35.3
3	Age(Years)	<30	167	44.7
		30–50	156	41.7
		>50	51	13.6
4	Monthly Income (In Indian Rupees.)	0	14	3.7
		<25,000	74	19.8
		25,000–50,000	111	29.7
		50,000–1,00,000	124	33.2
5	Occupation	>1,00,000	51	13.6
		Private/Self Employed	252	67.4
		Home maker	78	20.9
		Student	44	11.8
		12th and below	39	10.4
6	Education	Graduate	142	38
		Postgraduate & above	193	51.6
		Village	10	2.7
7	Domicile background	Town	73	19.5
		City	291	77.8

widely accepted methodology for item generation and item editing where experts in the relevant field of experience judge the appropriateness of each item before it goes through the phase of content validity (Churchill, 1979; Hardesty and Bearden, 2004). Focused group discussions were conducted to check content validity and to gain more insights.

3.4. Focus group discussions (FGDs)

Three FGDs with total of 45 shoppers provided insights into understanding the online sources of information which influence shoppers in their online buying decisions. They were selected by the convenient random sampling by visiting shopping malls, residential apartments, and educational institutions (Ulin et al., 2005), with due permission from the authorities of these locations. The discussions were carried out at three different times to understand the nuances of their online buying behaviour. Fifteen shoppers participated in a specific FGD session. Each respondent group had a good mix of male and female, from a range of blue-collar and white-collar occupations, students, homemakers, and retired professionals who were aged between 22 and 60 years. The members of the group pondered on a series of questions on the factors influencing the online shopping environment. They were further asked why these items were important to them to strengthen the understanding of the underlying *online shopping influences*. This exploratory phase produced items which were generic and identical to the extant literature. However, three specific items emerged as important aspects which were retained for further process of the evaluation. These three variables (items) that were identified in the process of *generation of items* were added to the list:

1. I certainly look for very good reviews before buying the product online;
2. Information on the product in the company website or at the marketplace is useful in decision-making; and
3. The user experience on the website helps me in arriving a decision based on reviews.

An important consideration in scale development papers is the adequacy by which a certain domain of content is identified. The content validity in the scale is strengthened by conducting focus group meetings which help in the identification and generation of items. Thus, the review of literature and focus group discussions provide insights into the items which highlighted the usefulness of online sources of information for consumers' buying decision process. In the next step, a self-administered questionnaire with these 13 items on a 5-point scale was administered.

3.5. Purification study

Purification study is a widespread approach in empirical research which examines the dimensionality of the items and has two phases: exploratory factor analysis along with initial coefficient alpha; and confirmatory factor analysis (Churchill, 1979). This study evaluates the robustness of the items by eliminating items from a multi-item scale to improve the measurement properties of the newly developed scale which is intended to measure 'online susceptibility' (Sweeney and Soutar, 2001; Wieland et al., 2017). A consumer survey was conducted to understand the factor structure that underlies the online shopping influences and to strengthen the item pool further. To assess the factor structure underlying this list, data was collected through a questionnaire of consumers in India who use online information before making a purchase decision.

3.6. Phase 1- exploratory factor analysis

For the first phase of analysis, we collected data from 400 consumers

Table 2
Confirmatory factor analysis (CFA).

Sl. No.	Attributes	Mean score	Standard Deviation (SD)	Factor Loadings	Reliability (Cronbach alpha)
Factor 1:					0.853
<i>Evidential Online Influence</i>					
1	Purchasing Intention increases as the number of reviews increases.	3.805	1.2392	0.817	
2	Even a few bad reviews may lead to negative perception for the purchase of the product.	3.123	1.1012	0.677	
3	I certainly look for very good reviews before buying the product online.	3.460	1.1449	0.734	
4	I usually compare positive and negative online reviews before buying.	3.545	1.1838	0.786	
5	Ratings for the product are important in buying the product/service.	3.291	1.1707	0.655	
Factor 2:					0.781
<i>Confirmational Online Influence</i>					
6	I certainly look for online blogs/social networking sites to find more information on the product category/brands.	2.473	1.0423	0.775	
7	Information on the product in the company website or at the marketplace is useful in decision-making.	2.332	1.1307	0.725	
8	Quality of the reviews reduces the uncertainty of product quality and helps me in making my decisions.	2.604	1.1595	0.719	
Factor 3:					0.717
<i>Experiential Online Influence</i>					
9	I trust the reviews as buying decisions based on reviews that has helped me in the past.	2.465	1.0239	0.721	
10	The user experience on the website helps me in making a decision based on reviews.	2.580	1.1214	0.699	
11	I do participate in writing reviews once I have made a purchase.	2.594	1.0614	0.713	

in India using a convenience sampling method, a non-probability sampling technique to which the investigators had geographical proximity, convenient access, availability at a certain time and consumers who were willing to participate in the study (Etikan et al., 2016). The size of the sample is determined by the nature of data robustness and a size of 400 samples was found appropriate for data having no cross-loadings, strong factor loadings of ≥ 0.50 (Tabachnick and Fidell, 2013), and high reliability of ≥ 0.70 (Tabachnick and Fidell, 2013; Kyriazos, 2018). Convenience samples were identified through shopping malls, residential apartments and educational institutions who were asked the qualifying question “Have you used online sources of information like websites, online reviews, online ratings, blogs when buying products?” This ensured that the participants had used online sources of information before they purchased products online or offline. Respondents rated the 13 items on a 5-point Likert scale ranging from 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, and 1 = Strongly Disagree. The Likert scale signifies the responses on various levels of disagreement and agreement which is widely used (Gangwar et al., 2015), and is the best design, especially in online and self-administered surveys (Hair et al., 2008). This 5-point scale has been most often applied as it has a shorter average completion time and if respondents are unsure of the items, they may opt for a midpoint (neutral option) explaining the satisfying behaviour (Chyung et al., 2017). In a study conducted by Adelson and McCoach (2010), a good model fit with significantly higher reliability for a 5-point Likert scale was obtained.

Out of 400 questionnaires that were received in our study, 26 were dropped due to inconsistency of information. The final analysis was based on the responses of 374 respondents. The majority of the

Table 3
Validity estimates: Convergent validity (purification stage).

Constructs	Cronbach's alpha (Construct Reliability CR)	Average Variance Explained (AVE)	Reliability	Convergent Validity
EOI	0.853	0.542	Yes	Yes
COI	0.781	0.548	Yes	Yes
EPOI	0.717	0.506	Yes	Yes

Note: The criteria for convergent validity are: the CR should be more than 0.70, the AVE should be more than 0.50, and the CR should be more than AVE (Hair et al., 2011).

respondents, 62 percent, were male and 39 percent were women. The marital status reported by the sample was 65 percent married; 45 percent of the sample were in the age group <30 and 42 percent were between the ages of 30 and 50: 38 percent of the respondents had graduate and 52 percent had post-graduate degrees. The occupational breakdown of the sample was 67 percent private/self-employed, 21 percent homemaker and 12 percent student. The sample was represented by the following income categories 25,000/- to 50,000/- (30%), 50,000/- to 1,00,000/- (33%) and >1,00,000/- (14%). Table 1 summarizes the demographic data.

The data received from the respondents on the 13 items were tested for reliability and were subjected to exploratory factor analysis (EFA) with principal axis factoring and varimax rotation, and eigen value was adopted to determine the number of factors (Hair et al., 1998). Two items, *I rely on online reviews for expensive and high involvement products only (Item 3)* and *I use online reviews for gaining product information for less popular products as compared to popular products (Item 9)* were dropped from the analysis as their factor loadings were less than 0.5. The EFA analysis using the 11 items resulted in identifying a three factor solution. Based on the results of principal component analysis, the items were examined which led to naming them as *Evidential online influence*, *Confirmational online influence*, and *Experiential online influence*. The items that formed factor 1: *purchasing Intention increases as the number of reviews increases (Item 1)*; *even few bad reviews may lead to negative perception for the purchase of the product (Item 2)*; *I certainly look for very good reviews before buying the product online (Item 11)*; *I usually compare positive and negative online reviews before buying (Item 4)*; and *ratings for the product is important in buying the product/service (Item 10)*. As these items explained the evidence that is looked for by the users in the online environment, we chose to name it *Evidential online influence*. The items that formed factor 2 comprised *I certainly look for online blogs/social*

Table 4
Validity estimates: Discriminant validity (purification stage).

Construct	AVE	EOI	COI	EPOI
EOI	0.542	0.736		
COI	0.548	0.240	0.740	
EPOI	0.506	0.144	0.219	0.711

Note: Diagonal elements (in bold) are the square root of the average variance explained (AVE).

Table 5
Model Fit indices (Purification Stage).

Indices	Recommended Value	Literature	Model Fit Indices
GFI	≥0.90	Byrne (2010, 2013)	0.976
CFI	≥0.93	Hair et al. (2008, 2012a,b); Byrne (2010, 2013).	0.992
CMIN/df	<3	Hair et al. (2008); Byrne (2010)	1.245
AGFI	≥0.80	Byrne (2010, 2013)	0.961
RMSEA	≤0.08	Browne and Cudeck (1993); Byrne (2010; 2013)	0.026
NFI	≥0.90	Hair et al. (2008, 2012a,b); Hu and Bentler (1999)	0.962
NNFI (TLI)	≥0.90	Hu & Bentler (1999)	0.989
SRMR	<0.08	Hu & Bentler (1999)	0.0381

Note: GFI, CFI, CMIN/df, AGFI, RMSEA, NFI, NNFI, SRMR are as per recommended value.

networking sites to find more information on the product category/brands (Item 8); Information on the product in the company website or at the market-place is useful in decision-making (Item 12); and Quality of the reviews reduces the uncertainty of product quality; and helps me in making my decisions (Item 7). These items provide confirmation of the evidence that was identified was justifiable and hence we chose to name the factor *Confirmational online influence*. The third factor contained items: *I trust the reviews as buying decisions based on reviews has helped me in the past (Item 5); The user experience on the website helps me in making a decision based on reviews (Item 13); and I do participate in writing reviews once I have made a purchase (Item 6)*. These items offered consumers the opportunity to use their past online experiences in making their purchase decision and hence the authors chose to name the factor *Experiential online influences*.

3.7. Phase 2 – confirmatory factor analysis (CFA)

The findings above were confirmed through a Confirmatory Factor Analysis (CFA) using the same 11 items with AMOS which is a popular statistical package used in CFA research (Graham et al., 2003) that helps evaluate the congeneric measurement properties. AMOS was used in the current study as the structured coefficients can be easily obtained through AMOS and the step-by-step process through the conduct of CFA makes it user-friendly (Shek and Yu, 2014). The results revealed all factor loadings as having the value 0.50 and above (Hair et al., 2008). The CFA output on the factor loadings and reliability is shown in Table 2. The scale reliability was estimated through Cronbach’s alpha coefficients. The coefficients of the scale dimensions were 0.853, 0.781

Table 6
Proposed online susceptibility scale (OSS).

Sl. No	Attributes	Sources ^a
Factor 1: Evidential Online Influence		
1	Purchasing Intention increases as the number of reviews increases.	Park et al. (2007)
2	Even a few bad reviews may lead to negative perception for the purchase of the product.	Ba and Pavlou (2002)
3	I certainly look for very good reviews before buying the product online.	Pavlou and Dimoka (2006)
4	I usually compare positive and negative online reviews before buying.	Pavlou and Dimoka (2006)
5	Ratings for the product are important in buying the product/service.	Lackermair et al. (2013)
Factor 2: Confirmational Online Influence		
6	I certainly look for online blogs/social networking sites to find more information on the product category/brands.	Exploratory Study ^a
7	Information on the product in the company website or at the market place is useful in decision making.	Exploratory Study ^a
8	Quality of the reviews reduces the uncertainty of product quality and helps me in making my decisions.	Park et al. (2007)
Factor 3: Experiential Online Influence		
9	I trust the reviews as buying decisions based on reviews have helped me in the past.	Zhu and Zhang (2010); Kumar et al. (2016)
10	The user experience on the website helps me in making a decision based on reviews.	Exploratory Study ^a
11	I do participate in writing reviews once I make a purchase.	Lackermair et al. (2013)

^a The attributes have been suitably modified as per the exploratory study and FGD -They were considered based on the discussion with the subject matter experts and respondents.

Table 7
Factor loadings for purification and validation stages.

	Purification	Validation
EV1←EOI	0.817	0.897
EV2←EOI	0.677	0.721
EV3←EOI	0.734	0.748
EV4←EOI	0.786	0.766
EV5←EOI	0.655	0.659
C1←COI	0.775	0.936
C2←COI	0.725	0.701
C3←COI	0.719	0.909
EP1←EPOI	0.721	0.555
EP2←EPOI	0.699	0.845
EP3←EPOI	0.713	0.641

and 0.717 (Table 2) for *evidential online influence*, *confirmational online influence*, and *experiential online influence* respectively, which met the minimum level of 0.70 (Nunnally, 1978; Fornell and Laker, 1981; Nunnally and Bernstein, 1994; Hair et al., 2008) which confirmed the scale dimensions’ reliability. The scale has convergent validity based on the significant confirmatory factor loadings which are greater than 0.7 (see Table 3). The convergent validity of the scales was assessed using the guideline proposed by Hair et al., 2011. Hair et al. (2008) in their book *Multivariate Data Analysis*, has explained the convergent validity model which authors have used for the analysis. The discriminant validity condition was also met (see Table 4). Off-diagonal elements in Table 4 are the correlations among constructs. The discriminant validity of the scales was assessed using the guideline proposed by Fornell and Larcker (1981). Published research in the domains of marketing (Hair et al., 2012a), strategic management (Hair et al., 2012b) and management information systems (Ringle et al., 2012) has recommended the use of Fornell and Larcker criteria. This method has been internally consistent and conforms to linking data to abstract variables based on the rules of correspondence (Fornell and Larcker, 1981). The procedure also tries on a specific sample and does not allow judgement on the constructs at the population level. It has been frequently adopted by researchers in the reputable outlets such as *Journal of Business Research*, *Journal of Marketing*, *Journal of Marketing Research* and *Journal of the Academy of Marketing Science* (Shiu et al., 2011). As per the recommendation the square root of the AVE from the construct should be more than the correlation shared between the construct and other constructs in the model. Our findings support those guidelines for discriminant validity.

A measurement model involving the 11 items established during the *generation of items* stage provides a satisfactory fit with the data. The model fit indices reach the thresholds that are recommended by past literature studies (Browne and Cudeck, 1993; Byrne 2010, 2013) (see

Table 8

Validity estimates: Convergent validity (validation stage).

Constructs	Cronbach's alpha (Construct Reliability CR)	Average Variance Explained (AVE)	Reliability	Convergent Validity
EOI	0.871	0.580	Yes	Yes
COI	0.882	0.731	Yes	Yes
EPOI	0.727	0.525	Yes	Yes

Table 9

Validity estimates: Discriminant validity (validation stage).

Construct	AVE	EOI	COI	EPOI
EOI	0.580	0.762		
COI	0.731	0.113	0.855	
EPOI	0.525	0.220	0.139	0.691

Table 10

Model Fit indices (Validation Stage).

Indices	Recommended Value	Model Fit Indices
GFI	≥0.90	0.954
CFI	≥0.93	0.978
CMIN/df	<3	1.684
AGFI	≥0.80	0.925
RMSEA	≤0.08	0.051
NFI	≥0.90	0.949
NNFI (TLI)	≥0.90	0.971
SRMR	<0.08	.0503

(Note: GFI, CFI, CMIN/df, AGFI, RMSEA, NFI, NNFI, SRMR are as per recommended value).

Table 5). This has led us to finalize and propose the Online Susceptibility Scale (OSS), summarized in Table 6.

3.8. Data validation

We validated the confirmatory factor analysis with another data set of 276 respondents adopting the same procedure. Of the 276 responses, 262 were retained for the analysis and the remaining were eliminated due to data inconsistency. The factor loadings for purification and validation stages are presented in Table 7. The scale reliability was estimated through Cronbach's alpha coefficients. The coefficients of the scale dimensions were 0.871, 0.882 and 0.727 (see Table 8) for *Evidential online influence*, *Confirmational online influence*, and *Experiential online influence* respectively, which met the minimum level of 0.70 which confirmed the scale dimensions' reliability. The scale depicted good convergent validity based on the significant confirmatory factor loadings which are greater than 0.7 (see Table 8). The discriminant validity condition was also met (see Table 9). The results of CFA validated that the data fit well into the three-factor structure. The model fit indices like CFI (0.978), GFI (0.954), CMIN (1.684), AGFI (0.925) and RMSEA (0.051), NFI, NNFI, SRMR are as per the recommended value (see Table 10) and hence the model has achieved being a good model fit (Byrne, 2010, 2013).

4. Discussion

This research provides a thorough understanding of the salient determinants impacting the online shopping environment by integrating the reference group theory and technology acceptance model (TAM) theory. As indicated by extant literature, social influences in the online environment include online communities, discussion forums, blogs, and online reviews which helps strengthen the online social interactions: these are considered as social influences influencing consumer

participation (Hsu and Lin., 2008; Racherla et al., 2012; Yang, 2012; Hsu et al., 2013).

Online reviews have been indicated as an important source of information (Park et al., 2007; Fiore and Kim, 2007; Zhu and Zhang, 2010; Racherla et al., 2012; Lackermair et al., 2013; Willemssen et al., 2011). Hence, there is a need to understand the susceptibility of consumers' online shopper behaviour to online reviews. This has not been adequately addressed in terms of shopper influences. Therefore, it becomes imperative to validate all the dimensions identified through extant literature together in one measurement scale. Therefore, the main objective of the research study was to explore the underlying dimensions of online shopping influences using this to propose a scale: online susceptibility scale. To explore that objective, the research followed a systematic and scientific scale development procedure using 11 items identified through literature and focus group discussions. The study proposes an Online Susceptibility Scale (OSS) comprising three factors: *Evidential Online Influence* with 5 items, *Confirmational Online Influence* with 3 items and *Experiential Online Influence* with 3 items.

Based on the empirical and theoretical work in marketing, decision-making and judgement, consumers use a certain process to search for product information, with the size and quality of the consideration combined with the quality of purchase decision-making in an online environment (Haubl and Trifts, 2000; Yang, 2012). The literature indicates that the first indicator for any customer in the decision-making process is the user rating of the product indicated as stars. Also, research argues there is a gap between the user product ratings and the user product reviews (Lackermair et al., 2013). The current paper tried to identify these gaps by identifying online shopping influences that focus the consumer decision-making process in an online shopping space.

When customers shop online, they look for *Evidence* in the online environment to validate their purchase behaviour. They gather information from the number of reviews and the quality of user-generated product reviews that are presented in the online shopping portal which would strengthen their purchase intention (Haubl and Trifts, 2000; Kim et al., 2007; Li and Hitt, 2008; Pan et al., 2011). They also gain insights based on the good reviews included for the product and bad reviews would lead to negative perception of purchase of the product. Customers would also check and compare evidence based on the type of online reviews (positive/negative) (Sen and Lerman, 2007; Lee et al., 2008; Mudambi and Schuff, 2010; Racherla et al., 2012). It was also observed in the study that customers would rely on the ratings for the product which would ultimately provide evidence for information processing (Lee et al., 2008; Forman et al., 2008). Although these studies have enhanced our knowledge with respect to the perceived usefulness of product ratings, consumers look for additional decision tools which contribute more to their overall product evaluation (Lu et al., 2009; Siersdorfer et al., 2010).

However, *Evidential online influence* in isolation is not good enough for making the decision. The online evidence, when coupled with confirming this would provide more source credibility to the overall online purchase behaviour. Customers would confirm the information gathered pertaining to the products or brands by authenticating the information through online blogs, social networking sites (Yang, 2012; Lackermair et al., 2013), company websites (Chevalier and Mayzlin, 2006), or at the market-places which would support decision-making (Tata et al., 2020). The customers would also confirm the evidence gathered by looking at the quality of the reviews which would support the reduction of the uncertainty relating to the product quality.

In addition to the Evidential Online Influence and the Confirmational Online Influence, customers are also influenced by their past experiences which would gain trust for the available product reviews. Similarly, the user experience on the website helps customers in evaluating the online reviews (Yang, 2012; Racherla et al., 2012). The focus of online shoppers is to minimize cognitive efforts while shopping then improving accuracy in their purchase decisions (Kim et al., 2007). Thus,

the online reviews, ratings, blogs, social networking sites, company websites act as decision aids in an online shopping context (Racherla et al., 2012; Lackermair et al., 2013). Additionally, customers share their experiences (*Experiential Online Influence*) by their own contributions in writing reviews after their purchase (Yang, 2012). Consumers also self-verify the information about products, brands and services in this competitive marketplace to conform with their self-views (Stuppy et al., 2020). In the definition of Web 2.0 by O'Reilly, user generated ratings and review quality improves when the contributions of the users increase which would depend on consumers' willingness to contribute (O'Reilly, 2007). The key facets of sharing experiences include providing real-time feedback by communicating with other individuals about the past experiences or gaining real-time feedback about the purchase which the user is yet to make. This enhances the overall user experience by providing higher degrees of interactivity (Ariely, 2000). In summary, online shoppers gain evidence from several sources, they also confirm these from various media and use experience to make a conscious online shopping decision.

5. Contributions

The research has made significant contributions to the theory and practice.

5.1. Theoretical contributions

The research adds a new dimension to purchase decision literature. First, it has extended the conventional reference group influence concept to online shopping influences by developing and validating an 11 item Online Susceptibility Scale (OSS). To our best knowledge, extant literature has not suggested an individual scale to capture the online shopping influences. Hence this research provides a comprehensive OSS scale by introducing the three constructs: *Evidential online influences*, *Confirmational online influences*, and *Experiential online influences*.

Second, with the increasing use of e-commerce and the proliferation of the use of internet, consumers are using all forms of information channels and their past experiences to make the best shopping decision. This customer journey where past experiences have impacted perceptions and the current experiences impacting past ones has mirrored the experiential online influence (Grewal and Roggeveen, 2020). These collective journeys are being influenced by the social theory and hence factoring in social influences in customers shopping journey becomes very critical (Thomas et al., 2020). Thus, the research provides a unique contribution to the development of an online susceptibility scale which helps in understanding consumers' online shopping influences. The study also reiterates that the online shopping influences impact consumer decision-making thereby helping in understanding how shoppers are influenced online.

Third, the new proposed scale would help consumers' in the decision-making process which entails gathering information from online reviews, discussion forums, ratings; searching for authentic information of the product from websites, blogs to confirm their choice; while validating the product and brand decision (Racherla et al., 2012; Hsu et al., 2013). The tests of reliability, exploratory factor analysis, and confirmatory factor analysis indicated that the scale developed has a sound and reliable measurement model (Hair et al., 2012a; Byrne, 2013). The validation of the model confirmed the factor structure. Overall, the study provided comprehensive theoretical understanding of online shopping influences using the OSS which provides a base for future empirical studies.

5.2. Managerial implications

The study on emerging research area that is, online shopping influence, has key implications on a firm's marketing strategies. First, as literature has indicated, online discussions, blogs, reading reviews have

been dominantly used as online sources of information by consumers for gaining knowledge, sharing personal product experiences, and opinions (Racherla et al., 2012; Hsu et al., 2013). This helps both consumers in their information processing and firms in product development, marketing and customer relationship management. Second, it recommends that online marketing stakeholders like e-commerce portals and online marketplaces should consider the 'Online Susceptibility Scale' (OSS) to gain insights into the online shopping influences -and there-by manage their campaigns accordingly (Racherla et al., 2012; Lackermair et al., 2013). The results of the study specified that consumers evaluate their product and brand purchase decision based on the various forms of online sources of information: number of online reviews, and type of online reviews (positive or negative). Third, the findings also suggest that consumers check company related information on websites, blogs, and even product ratings to confirm their product searches (Stuppy et al., 2020). The results also specified that consumers use their experience of shopping online and contribute in writing positive or negative reviews/providing feedback following their purchase (Zhu and Zhang, 2010). Fourth, the study invites marketers to develop their marketing strategies after identifying the way consumers search for online influences to strengthen their purchase intention. As a result, marketing firms may consider this proposed instrument to provide smooth and enhanced online experience to consumers by either designing new product experiences or modifying the existing ones.

6. Conclusion

With the emergence of technology, online shopping has become convenient for consumers with respect to access to information and product recommendation, search and evaluation of information thereby leading to an actual purchase. Online shopping has thus become a part of consumers lifestyle. The concept of online shopping influences analysed in the paper is timely and provides the consumers with a broader and a wider network-based society which traditionally has been group-based. The online social shopping has helped consumers strengthen their social connections by sharing online shopping experiences, collecting shopping ideas from individuals they trust, exchanging opinions on various products, amongst other help. The development of that online susceptibility scale would help consumers in searching for online information before indulging in a transaction and sharing their experiences in the online forum after using the product. Through the development of this scale, consumers would have a better online shopping experience as online marketers and merchants would plan to add better functions or launch social shopping networks for customers so that they can rate and review the product portfolio in their online shops. The Evidential online influences, Confirmational online influences and the Experiential online influences would stimulate consumers' purchase intention, leading to an actual purchase from the website. The results of the study would make consumers recognize the influences of online shopping as a significant factor which influences their intention towards an online shopping transaction. The resultant theoretical contribution, managerial implications, and social implications are beneficial for researchers, academicians to consider this OSS scale as a pioneering work on the domain of online shopping influences; marketers to manage their campaigns in the online shopping environment; and understand the social influences impacting consumers online shopping behaviour.

6.1. Limitation and future scope

Although the scale provides evidence about shoppers' online susceptibility, continual observance is necessary given the fast-paced Internet development. A methodological limitation in this scale development study is that it adopts a cross-sectional approach and future scholars can check the appropriateness of the scale on a longitudinal study by observing certain groups of consumers over a period. The scale has been validated only for a specific region, and consumer class;

therefore, further testing is recommended to generalize the output attained. Scholars may explore across different cultures, consumer segments, and product types (search versus experience products; utilitarian, hedonic or value expressive products) to check for heterogeneity and homogeneity among varied online retail formats, mobile media, or social media platforms. Future researchers may investigate the role of OSS in conjunction with understanding the role of interpersonal influence on online group buying behaviour (Sharma and Klein, 2020). Future studies to assess the impact of online shopping influences across different socio-demographic variables based on gender, age, income, and education can also be explored. Additionally, as the current study is on developing a scale for online susceptibility, future research may consider the impact of the OSS influences on consumer decisions to abort or postpone purchases.

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