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Measuring consumer perception of social media marketing activities in e-commerce industry: Scale development & validation

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ABSTRACT

The internet has changed the nature of shopping in the past two decades, which has supported the proliferation of e-commerce sites and thus shopping has shifted to e-shopping. Also, customers use social media to gain information on preferred products with the best price options, as social media provides shoppers a voice, and facilitate them to interact and share their opinion worldwide. Moreover, social media is extensively adopted platform for e-commerce. Although, social media marketing has achieved wide acceptance in business, especially in e-commerce, there is no scale in the extant literature to measure perceived social media marketing activities (SMMA) in an e-commerce context. Therefore, this study develops and validates a 15-item, five-dimensional scale for measuring perceived SMMA of e-commerce based on extant literature on e-commerce and social media marketing and five different studies conducted in this research. The scale revealed comprehensive psychometric characteristics as per the results from the diverse reliability and validity checks. It was revealed that perceived SMMA positively influenced purchase intention and brand equity; which endorses the nomological validity of the developed scale. The new scale provides both theoretical as well as managerial implications along with the avenues for forthcoming research.

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1. Introduction

In the last decade, social media marketing has appeared as a dominant research stream which highlights the changing aspects of customer relationships. Social media marketing is also one of the top research priorities of Marketing Science Institute 2014–16 (MSI, 2014) and 2016–18 (MSI, 2016). The significance of social media can be witnessed by the number of active users Facebook has in a month which is 1.86 billion (Facebook, 2017) as of December 2016. If we consider this 1.86 billion as a number, then Facebook has outshined the most populated country (China-1.38 billion) and the strongest economy in the world (US-325 million). This huge customer base makes social media quite popular not only among users but also among the companies, which utilize social media as a marketing communication medium (Hood and Day, 2014; Yadav, 2017). As reported by Rapp et al. (2013), approximately 88 percent of the companies (FMCG & Retail, Media, Information Technology & Telecommunication, and Travel & Leisure) have started utilizing different social media platforms and almost 42 percent of them have fully integrated different social media platforms in their day to day marketing strategies. Also, about

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39 percent of the users use social media to gain information about various products and services, due to which social media is considered to be one of the best prospects that companies across various industries have, so as to remain in direct contact with the customers (Casey, 2017). Indeed, Fortune 500 companies are widely adopting Facebook, Twitter, and other online communities to facilitate interactions with customers (Culnan et al., 2010). As per the recent findings from Center for Marketing research, almost 63 percent of millennials like and/or follow brands on Facebook and about 19 percent of the millennials follow them on Twitter (Barnes and Correia, 2016). Also, customers use social media to gain information on preferred goods with the best price options (Ismail, 2017), as social media provides shoppers a voice, and facilitate them to interact and share their opinion worldwide (Kozinets et al., 2010). As of June 2016, there are 3.6 billion internet users around the world and out of this 55 percent of the internet users are from Asia (Internet World Stats, 2016). Also, more than 82 million people around the world shop online and total e-commerce sales in the top 10 countries will surpass \$2277 billion by 2016 and China tops the chart in e-commerce (Willemsen et al., 2016).

The past decade has also experienced a considerable change in consumers' lifestyle as a result of the emergence of internet technologies. As far as online shopping is concerned, e-commerce has undergone a rapid expansion, and online shopping has emerged as one of the most preferred means of purchasing goods (Yan et al., 2016). Moreover, social media is widely utilized for e-commerce marketing activities (Yadav and Rahman, 2017). India and other Asian countries are no exception in this universal trend, and it has achieved high echelons of growth in the social media adoption by e-commerce during the past decade (Lee and Phang, 2016). Hence there is need to study perceived social media marketing activities (hereafter perceived SMMA) in an e-commerce context.

Social media marketing has achieved wide acceptance in business, especially in e-commerce, however, there is no scale in the extant literature to measure perceived SMMA in e-commerce. As e-commerce is a different industrial context in terms of both consumer and industry characteristics, there is a need to develop a separate scale that captures the perceived SMMA in E-commerce industry with special emphasis on e-retailing. Also, it has been recommended by Kim and Ko (2012) and Lu et al. (2016) to develop a more effective scale to capture perceived SMMA in different industries. Due to the non-existence of a scale that captures perceived SMMA carried out by e-commerce, companies had to rely on generic measures which may not be an appropriate measure of perceived SMMA in the e-commerce industry. Although social technologies or social media components have been widely incorporated in the e-commerce sites (e.g. Amazon, Flipkart etc.), its efficacy is rarely evaluated and confirmed in the extant literature (Lu et al., 2016). Hence a comprehension of perceived SMMA of e-commerce is essential, as it would offer new social media marketing management outlooks and insights to e-commerce industry, and research in this arena will further enrich the literature on e-commerce and social media.

Thus, to enhance research on e-commerce industry from social media marketing perspective and to develop further the practices and activities in e-commerce's social media marketing, it is essential to have a comprehensive approach to explore a set of e-commerce perceived SMMA. A valid and reliable scale that measures perceived SMMA in e-commerce context could fill this lacuna in e-commerce literature. The present study seeks to:

- develop and validate a scale for measuring perceived SMMA of e-commerce in e-retailing context.
- build nomological validity by specifying and testing the effect of perceived SMMA on brand equity and purchase intention.

This scale will enrich e-commerce and social media literature or the social commerce literature by delivering new insights into social media marketing research in the e-commerce industry. E-commerce companies will also benefit from this scale as it will help them to capture the perceived SMMA.

2. Social media marketing: the concept

Before we proceed to explore social media marketing, it is important to define and understand the meaning of the term 'social media'. According to Kaplan and Haenlein (2010), "Social Media is a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content" (p. 61). Social media can take various forms like social networking sites, blogs, wikis, microblogging sites, etc. Presently the most widely adopted social media platforms are Facebook, Twitter, and content sharing website YouTube (Pham and Gammoh, 2015).

The extant literature has not reached a collective agreement as far as defining social media marketing (Table 1) is concerned, apart from the gaining popularity of the SMM in industry and academia. Some researchers define it as a means to connect and interact with existing and prospective customers and build customer relationships (Chan and Guillet, 2011; Chi, 2011; Chang et al., 2015; Choi et al., 2016), while others define it as a process of enhancing stakeholders' value through marketing activities by incorporating social media platforms in marketing communication (Pham and Gammoh, 2015; Tuten and Solomon, 2016; Felix et al., 2017). Nevertheless, some of the similar components of SMM among those definitions are the use of social media platforms and encouraging users to spread SMM content via SMMA like interaction, information, word of mouth, personalization etc. Since building and maintaining lasting stakeholder relationships is the goal of relationship marketing (Gronroos, 1994, 1997; American Marketing Association, 2017) and the essence of social media marketing also is rela-

Table 1
Definitions of Social Media Marketing.

S.No.	Author	Concept	Definition	Perceived SMMA Focused
1	Taubenheim et al. (2008, p. 58)	Social Media Marketing	"A way of using the Internet to instantly collaborate, share information, and have a conversation about ideas or causes we care about"	Information & Interaction
2	Chan and Guillet (2011, p. 347)	Social Media Marketing	"A social and managerial process by which individuals and groups obtain what they need and want through a set of Internet-based applications that enable interaction, communication, collaboration of user-generated content and hence, sharing of information such as ideas, thoughts, content, and relationships"	Personalization, Interaction, Information
3	Chi (2011, p. 46)	Social Media Marketing	"Social media marketing provides meaning and connection between brands and consumers and offers a personal channel and currency for user-centered networking and social interaction"	Personalization & Interaction
4	Chang et al. (2015, p. 777)	Social Media Marketing	"Social media marketing, which uses social networks such as Facebook to enable content sharing, information diffusion, relationship building, and fans cohesion"	Interaction & Information
5	Pham and Gammoh (2015, p. 325)	Social Media Marketing	"Company's process of creating and promoting online marketing-related activities on social media platforms that offer values to its stakeholders"	In general
6	Choi et al. (2016, p. 772)	Social Media Marketing	"Engaging with customers through SNSs is commonly known as social media marketing and brings several benefits to companies, such as creating word-of-mouth, positively affecting customer equity, enhancing customer loyalty to the company, and increasing purchase intention of the company's products or services"	Interaction & Word of Mouth
7	Tuten and Solomon (2016, p.21)	Social Media Marketing	"Is the utilization of social media technologies, channels, and software to create, communicate, deliver, and exchange offerings that have value for an organization's stakeholders"	In General
8	Felix et al. (2017, p. 123)	Social Media Marketing	"Is an interdisciplinary and cross-functional concept that uses social media (often in combination with other communications channels) to achieve organizational goals by creating value for stakeholders"	In General

tionships (Chan and Guillet, 2011; Chi, 2011; Chang et al., 2015; Choi et al., 2016; Buchanan-Oliver and Fitzgerald, 2016), SMM can be considered as a subset of relationship marketing and marketing. Hence, we define:

Social Media Marketing (SMM) as a process by which companies create, communicate, and deliver online marketing offerings via social media platforms to build and maintain stakeholder relationships that enhance stakeholders' value by facilitating interaction, information sharing, offering personalized purchase recommendations, and word of mouth creation among stakeholders about existing and trending products and services.

In this study, we will measure perceived SMMA of e-commerce which can be defined as consumers' perception of various SMM activities carried out in an e-commerce context.

3. Social media marketing research in e-commerce: a theoretical perspective

The Internet has changed the nature of shopping in the past two decades which has supported the proliferation of e-commerce sites and thus shopping has shifted to e-shopping. Another revolution in the internet era is Web 2.0 which provides interactive components to the Web 1.0, and the most important application of Web 2.0 is social media. The increased acceptance of social media sites, viz., Facebook and Twitter has opened prospects for innovative business models of e-commerce, often known as social commerce (Liang and Turban, 2014). As defined by Stephen and Toubia (2010), "Social commerce and social shopping are forms of internet based social media that allow people to participate actively in the marketing and selling of products and services in online marketplaces and communities" (p. 215). We can say that these applications amalgamate online shopping/e-commerce and social media (Tedeschi, 2006). Therefore, social commerce can be considered as a subset of electronic commerce that encompasses social technologies to support e-commerce day-to-day transactions and activities (Liang and Turban, 2014; Yadav et al., 2013).

There are different social commerce activities viz. social media marketing (SMM), enterprise management, technology support integration, management and organization (Liang and Turban, 2014). The focus of this study is the first component of social commerce activities i.e. (SMM), which includes various tools like user ratings, reviews, recommendations, referrals, internet forums, online communities, and social shopping/group buying (Hajli, 2015). These tools facilitate various SMMA like interaction, sharing of crucial information about products, the spread of WOM about existing and trending products and services etc. Social media marketing in e-commerce industry is trending now and will continue in the future also.

The incorporation of SMM components like user ratings, reviews, recommendations, referrals, wishlists (public), sharing of products purchased on Facebook & Twitter are the part of social media marketing and are widely adopted by e-commerce companies like Amazon, Flipkart etc. The feature of Facebook universal login or 'Facebook Connect' also facilitates social media marketing activities in e-commerce (Tuten and Solomon, 2016). As per the findings of *Business Insider*, online social commerce has helped the top 500 retailers to generate \$2.69 billion in 2013, an increase of 60- percent over the previous year (Workman and Adler, 2014). Due to this growing popularity, more than 88 percent of businesses across various

industries (Media, Education, Financial Services, Health, and Sports and Gaming) have adopted social commerce to improve SMM of their e-commerce platforms (Huang and Benyoucef, 2013).

The extant literature on social media marketing in e-commerce industry has focused on broad constructs of social commerce, like social commerce intention, (Liang et al., 2011; Hajli, 2014; Zhang et al., 2014; Hajli and Sims, 2015), social commerce characteristics (Kim and Park, 2013), and social commerce constructs (Hajli, 2013, 2015; Hajli et al., 2013; Hajli and Sims, 2015). However, social media marketing in e-commerce has not received much attention in the extant literature. Since social media marketing is the essence of social commerce and one of the most important activity of social commerce (Liang and Turban, 2014; Lu et al., 2016) and customers play a pivotal role in social media marketing, hence measuring perceived SMMA in e-commerce industry is very important. The current study addresses this research gap and develops a scale to measure perceived SMMA in the e-commerce industry.

4. Scale development and validation process

Present study follows current scale development studies in online social media literature (e.g. Baldus et al., 2015; DeVellis, 2016; Hollebeek et al., 2014) and previous scale development studies (Churchill, 1979; Gerbing and Anderson, 1988). To develop a measure of perceived (SMMA), we initiated by reviewing the extant literature on social media marketing in an e-commerce context, followed by establishing baseline dimensions of perceived SMMA by adopting a mixed method approach, with qualitative methods employed in the exploratory phase, and proceeded further with improved scale development procedure using quantitative methods. Table 2 offers an outline of the entire procedure adopted for scale development.

4.1. Identification of perceived SMMA dimensions

The area of SMM in e-commerce is emerging and limited studies have been conducted; therefore, we implemented grounded theory approach in the current study (Spiggle, 1994) to explore perceived SMMA dimensions and to develop a scale for perceived SMMA in the e-commerce industry. Focus group and open-ended surveys were conducted to explore consumers' motivations for participating in perceived SMMA in e-commerce.

Table 2
Scale Development Procedure.

Steps Involved	Particulars
Study 1-Focus Groups	<ul style="list-style-type: none"> Two groups with eighteen members, with nine in each group Examination of the transcripts to identify perceived SMMA dimensions
Study 2-Open-ended surveys	<ul style="list-style-type: none"> 55 members This procedure yielded five dimensions of perceived SMMA (Table 3)
Item Generation	<ul style="list-style-type: none"> Literature review (SMM and E-commerce) Result = 56 items Generated
Item Judging	<ul style="list-style-type: none"> Panel 1 Judgement = 38 Items retained Panel 2 Judgement = 21 items retained
Scale refinement (EFA & CFA)	Study 3 (n = 344)
Exploratory Factor Analysis	EFA = 15 items (Five Dimensions) retained (Study 3, Table, 4)
Confirmatory Factor Analysis (First Order)	(15 Items Retained, Tables 5 and 7)
Overall Fit	
Dimensionality	Five Dimensions
Factor Loadings	All good loadings
Reliability	All Values of CR > 0.7
Validity	
Convergent Validity	AVE > 0.5 for all Dimensions
Discriminant Validity	AVE > MSV > ASV and square root of AVE > inter-construct correlations
Scale Validation (CFA & SEM)	Study 4 (n = 348)
Confirmatory Factor Analysis (Second Order)	Perceived SMMA (15 Items Retained)
Overall Fit	
Dimensionality	One construct of Five dimensions (Second-order)
Factor Loadings	All Good Loadings
Reliability	All Values of CR > 0.7
Validity	
Convergent Validity	AVE > 0.5 for all Dimensions
Discriminant Validity	AVE > MSV > ASV and square root of AVE > inter-construct correlations
Nomological Validity	Examined the impact of perceived SMMA on 2 outcomes (brand equity and purchase intention) Fig. 1 and Table 6
Test-Retest Reliability	Study 5 (n = 169) Perceived SMMA dimensions are relatively stable over different time period

4.1.1. Study 1-focus group

Students of post graduate and doctoral programs from a large university in India were contacted through e-mail and were recruited as focus group participants. Students were the target respondents in this study as they are tech-savvy (Islam and Rahman, 2017; Nadeem et al., 2015), they possess a wide exposure of the internet (Bolton et al., 2013), college students are highest users (82%) of social media (Greenwood et al., 2016; Kim and Ko, 2012), and they are very active contributors in social media and e-commerce (Ismail, 2017; Islam and Rahman, 2016). To ensure that all focus group participants are active participants of e-commerce SMMA, we applied the following criteria:

- Each participant uses social media daily (Facebook, Twitter etc.) i.e. should be an active user of social media.
- Each participant should have an account (at least two years old) with e-commerce sites (e.g. Amazon, Flipkart etc.) and purchases goods from these websites or from the product links of these websites available on Facebook at least once in every two months.
- Provides ratings, reviews, and recommendations about the product after purchase from e-commerce sites, and/or refer to them before making any new purchase (either on e-commerce website or social media sites like Facebook, Twitter, and YouTube etc.)
- Likes Facebook brand pages of e-commerce sites.

The aforementioned criteria were stringently followed to guarantee only valid and pertinent participation. The university selected for the study had about 850 students enrolled in postgraduate and doctorate programs; 97 students satisfied the aforementioned criteria. Only 45 students out of these 97 students, agreed to participate in FGDs. Two researchers conducted FGDs - out of these two, one was the moderator (author) and the other as a skilled facilitator (possessed an experience of eight years in a marketing research organization). “Moderator” is an individual who conducts FGDs and “facilitator” is an individual who supports the “moderator” to make a record of keynotes/quotes stated by the members in the FGD (Knops et al., 2010). Hence, all vital procedures for conducting FGDs as recommended by Morgan (1996) were considered and followed.

The students who consented to participate in FGD were further screened to segregate students who were more active in SMMA of e-commerce sites. Students were screened on the basis of the following criteria: first, on the basis of frequency of purchase of goods on e-commerce platforms via product links on social media. Second, the student not only provides product ratings, reviews, recommendation and referrals on e-commerce sites and social networking sites but also shares videos and pictures of the goods purchased. Consequently, 27 students from the total of 45 were excluded and 18 students who were very active in social media of e-commerce were finally selected for the FGDs. The finally selected 18 students (11 males and 7 females; $22 \text{ years} \leq \text{age} \leq 35 \text{ years}$, mean age 29.38 years) were randomly assigned to two focus groups comprising of 9 members each. The majority of the focus group comprised of the students pursuing doctorate (12) and were over 28 years old, and the remaining below 28 years of age. The participants were provided a consent form to make the purpose and process of focus group explicit. The consent form also incorporated a declaration to protect the privacy of the participants and space for their consent regarding voluntary participation in FGD (Morgan, 1996).

All the members of FGD signed the form only after thoroughly reading the consent form and knowing the purpose of FGD. All participants were assigned a code number which was placed in front of them in order to facilitate the moderator to prepare field notes. Both of the FGDs were conducted on weekends i.e. Saturdays and Sundays starting from 11:00 AM and ending at 12:15 P.M. FGDs were based on the questioning routes which were developed specifically for the current study (as suggested by Krueger and Casey, 2009). All possible steps were taken to ensure appropriate execution of the FGD. Researchers were cautious that the participants’ fatigue has no effect on the focus group. Gifts were offered to the FGD members for participation. The transcripts were analyzed by the authors along with two research assistants to recognize the dimensions associated with perceived SMMA of e-commerce. Subsequently, an “open-ended response based survey” was also carried out to decide on the dimensions of perceived SMMA of e-commerce companies.

4.1.2. Study 2-open-ended responses

Applying snowball sampling, 70 respondents were contacted (using e-mail and mobile) to take an open-ended survey. Snowball sampling was employed in study 2 as it enhances the possibility of detecting the anticipated attributes in the population with low sampling variance and cost (Henry, 1990; Malhotra and Dash, 2016; Sampath, 2001). Also, the referrals possess comparable demographic and psychographic attributes to the individual recommending them (Frankwick et al., 1994). Furthermore, there are similar studies (Kurasaki, 2000) in the extant literature employing snowball sampling in an open-ended survey. Appropriate procedures were followed to confirm the diverse demographics of the survey respondents. The criteria for participation in the open-ended survey were same as for the focus group (Study 1), i.e.

- Each participant uses social media daily (Facebook, Twitter etc.) i.e. should be an active user of social media.
- Each participant should have an account (at least two years old) with e-commerce sites (e.g. Amazon, Flipkart etc.) and purchases goods from these websites or from the product links of these websites available on Facebook at least once in every two months.

- Provides ratings, reviews, and recommendations about the product after purchase from e-commerce sites, and/or refer to them before making any new purchase (Either on e-commerce website or social media sites like Facebook, Twitter, and YouTube etc.)
- Likes Facebook brand pages of e-commerce sites.

In total 55 respondents agreed to participate in the survey. This sample included 21 females and 34 males falling in the age bracket of 21–36 years. This survey was initiated with questions based on FGD's questioning route prepared by a group of experts (five research scholars along with two professors of marketing). The questioning route was organized in a manner so as to extract utmost information from participants regarding perceived SMMA of the e-commerce platform. Before the initiation of the survey, the participants viewed a 15-min presentation (PPT) on e-commerce social media platforms (like Amazon, Flipkart etc., and their respective Facebook & Twitter pages) in order to make the concept more comprehensive and to facilitate them to answer questions explicitly. Participants had to describe in writing about perceived SMMA of major e-commerce platforms in 90 min. Content analysis was employed to analyze the responses with help of a coding team. According to Hsieh and Shannon (2005), content analysis is a "subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns" (p. 1278). As suggested by Hsieh and Shannon (2005), the specialists studied the definitions and pertinent theories for describing the preliminary codes of the concept. The next task was to develop a list of repetitive themes (dimensions of perceived SMMA). To achieve this the researchers utilized the categorization method as recommended by Lincoln and Guba (1985). According to Lincoln and Guba (1985), "Categorization is a process whereby previously unitized data are organized into categories that provide descriptive or inferential information about the context or settings from which the units were derived" (p. 203). It encompasses sorting items into temporary categories based on look-alike" attributes. It is an intense examination of the language to sort large text into effective categories that denote alike meanings (Weber, 1990). Intercoder reliability of the study was also evaluated. It assesses the degree of agreement amongst various coders about assigning codes to the data (Kurasaki, 2000). We assessed the "intercoder reliability" on all transcripts utilizing "Cohen's kappa" scores via coding analysis toolkit, every calculation created an overall kappa score in which true agreement was assessed and a score revealed the kappa score once overlapping coding was considered. Coding analysis toolkit has been widely employed to measure intercoder reliability (Lu and Shulman, 2008; MacPhail et al., 2016) in the extant literature. Overall, the kappa scores of the study ranged from 0.88 to 0.93, all above the suggested range of 0.7 (Lombard et al., 2002). This establishes the intercoder reliability of this study. The analysis revealed that participants were aware of SMMA concept. Subsequent to the analysis, researchers in the team met to reconcile the outcomes of both qualitative studies (FGDs & open-ended survey), and an initial listing of five dimensions of perceived SMMA was developed (Table 3) with their operational definitions.

4.2. Item Generation

Having identified the dimensions of perceived SMMA in e-commerce, the subsequent task was to generate items with the help of construct definitions. To execute this task, a team comprising of two researchers along with two research assistants was formed. The researchers and the research assistants generated 56 items to measure the 5 dimensions of perceived SMMA of e-commerce.

4.3. Item reduction

Item reduction was conducted in two stages. Initially, the list of 56 items was scrutinized by an expert panel (Panel I) consisting of six members (three professors of marketing, one professor of digital and social media marketing, and two experts from e-commerce industry). All the members of Panel I had an experience of five years and above in their respective domains. Each member of the panel reviewed the list of items and judged the extent to which each item denoted the perceived SMMA of e-commerce. The expert panel further facilitated in excluding redundant items and retaining items that possessed good face validity. Following DeVellis (2016), an item was retained only when it was allocated to the same dimension by minimum 70% of the experts. Hence, 38 items were selected for further screening. Further, definitions of the constructs were provided to a new expert panel (Panel II) which comprised of 9 members (two professors of marketing, three social

Table 3
Perceived SMMA Dimensions in E-Commerce.

S.No.	Dimension	Definition
1	Interactivity	Extent to which e-commerce's social media facilitates customers to share content and views with company and other customers
2	Informativeness	The degree to which e-commerce social media offers accurate, useful, and comprehensive information
3	Personalization	The degree to which e-commerce social media offer tailored services to fulfill the preferences of a customer
4	Trendiness	The extent to which e-commerce's social media offers trendy content.
5	Word-of-Mouth	The degree to which e-commerce's customers recommend and share experience about e-commerce on social media.

media practitioners, two experts from e-commerce industry, and two doctoral students of digital marketing) all of whom possessed a work experience of four years and above. Experts of Panel I and Panel II were different from each other. Experts from Panel II reviewed the list of items and judged the items based on the extent of their accurate representation of the defined dimensions. An item was retained only when it was allocated to the same dimension by minimum 70% of the experts (DeVellis, 2016). After this process, 21 items were left for further analysis.

4.4. Scale refinement and item Purification (Study 3)

4.4.1. Sample and data collection

The respondents of the present study were the students of post graduate and doctoral programs from a large university in Delhi, India. Students were the target respondents in this study as they are tech-savvy (Islam and Rahman, 2017; Nadeem et al., 2015), they possess a wide exposure of the internet (Bolton et al., 2013), college students are highest users (82%) of social media (Greenwood et al., 2016; Kim and Ko, 2012), and they are very active contributors in social media and e-commerce (Ismail, 2017; Islam and Rahman, 2016). Delhi was chosen as it accounts for one of the highest number of social media users in India (Jain, 2017). The specific university was chosen as it is one of the biggest university in India as per student population and Delhi being the capital of India, possesses students from the majority of Indian states. To ensure that all respondents are active participants of e-commerce SMMA, purchase goods from e-commerce sites (at least from the past two years) or from its social media links, we asked a set of screening questions:

- Do you use social media (Facebook, YouTube, or Twitter) daily (Yes/No)?
- Have you liked and followed e-commerce brand pages on social media (Yes/No)?
- Do you possess an account with e-commerce sites (Amazon, Flipkart, etc.) (Yes/No)?
- Do you purchase goods from e-commerce sites or from the product links of these websites available on social media (Yes/No)?
- How long have you been purchasing goods from e-commerce sites? (One year, two years, above two years)?
- Do you provide ratings, reviews, and recommendations about a product after purchase from e-commerce sites, and/or refer to ratings, reviews, and recommendations provided by other consumers before making any new purchase (either on e-commerce website or social media sites like Facebook, Twitter and YouTube etc.) (Yes/No)?

This process was followed to judge the behavior of the respondents regardless of the features of e-commerce and social media platform which they use. Respondents of the survey were invited to deliver their views about e-commerce platform of their choice. However, due to the absence of any list of e-commerce site members and its social media in India, we employed convenience sampling to collect data (Martin and Herrero, 2012). The survey encompasses three sections: first, the screening questions; second, 21 items; and finally questions on the demographic profile. We measured perceived SMMA of e-commerce on a seven-point Likert scale where 1 = “strongly disagree,” and 7 = “strongly agree”. The data were collected for eight weeks and 381 responses were captured, 37 responses were eliminated due to incomplete data or data quality issues. Finally, 344 valid surveys forms (which included 67 percent males and 33 percent females, with age ranging from 21 to 34 years) were retained.

Table 4
Exploratory Factor Analysis.

Construct	Items	Factor loadings				
		1	2	3	4	5
Informativeness	INF3	0.929				
	INF2	0.914				
	INF1	0.905				
Trendiness	TREND1		0.897			
	TREND2		0.892			
	TREND3		0.875			
Interactivity	INT3			0.907		
	INT1			0.905		
	INT2			0.866		
Personalization	PERS3				0.877	
	PERS2				0.867	
	PERS1				0.828	
WOM	WOM3					0.830
	WOM1					0.825
	WOM2					0.825
Cronbach Alpha		0.97	0.973	0.972	0.899	0.874

Variance Explained = 89.9%, KMO = 0.859, Extraction Method: Principal Component Analysis with Varimax Rotation

4.4.2. Exploratory factor analysis

We applied exploratory factor analysis (EFA) to examine the appropriateness of the 21 items for explaining the five dimensions of perceived SMMA (Table 4). Principal component analysis with varimax rotation (as suggested by Costello and Osborne, 2005) was used with SPSS 21.0. An Eigen value (1) was set to a minimum cut off (Kim and Mueller, 1978). Consistent with the anticipations the analysis emerged with five dimensions. Items possessing a loading below 0.5 and the items that cross-loaded on two or more factors were removed (Hair et al., 2014). Subsequent EFA eliminated six more items and delivered five factor solution with fifteen items representing five dimensions of perceived SMMA of e-commerce (Interactivity, Informativeness, Word-of-Mouth (WOM), Personalization, and Trendiness, with three items in each dimension). The “Kaiser–Meyer–Olkin (KMO)” value came out to be 0.86 and “Bartlett’s test of sphericity” ($p < 0.000$) reflected the merit of the correlation matrix. These five factors accounted for a total variance of 89.9%. The Cronbach’s alpha values ranged from 0.87 to 0.97, all above the suggested onset of 0.7 (Nunnally and Bernstein, 1994).

4.4.3. Confirmatory factor analysis (initial validation)

CFA was executed using AMOS 22.0 and importance of the model along with relationships amongst the items were examined statistically. CFA included the five dimensions (Table 5) with its fifteen items (Table 7) explored by EFA as an input. CFA was executed to examine the factor structure via statistical tests of the model and the association among scales and its the scale items. We primarily evaluated the goodness of fit for the five-factor model using “rotated component matrix” from EFA as input with “maximum likelihood solution”. A measurement model was built and frequently used goodness of fit indices were examined; “chi-square divided by degree of freedom (χ^2/df)”, “goodness of fit index (GFI)”, “adjusted goodness of fit index (AGFI)”, PCLOSE, “comparative fit index” and finally “root mean square error of approximation (RMSEA)”.

The results of the CFA were examined and the results revealed an overall good model fit with the observed data; ($\chi^2 = 147.216$, $df = 80$, $\chi^2/df = 1.840$, $p < 0.001$, $GFI = 0.95$, $AGFI = 0.92$, $NFI = 0.97$, $CFI = 0.99$, $TLI = 0.98$, $RMSEA = 0.05$, $PCLOSE = 0.525$). The results also met the suggested range of “average variance extracted (AVE)” by Fornell and Larcker (1981). The AVE value of all the five factors was above 0.5. Findings are portrayed in Table 5 and 7.

4.4.4. Construct reliability

Construct reliability of the developed scale was evaluated using Cronbach’s alpha and composite reliability (CR). While evaluating the CR we adhered to the suggestions of Hair et al. (2014) which states that all the values of CR must be 0.7 and above to reflect suitable reliability. Composite reliability reflects the internal consistency between all the items measuring that specific construct (Fornell and Larcker, 1981). As all the values of CR were above the suggested value (Nunnally and Bernstein, 1994) of 0.7, it can be concluded that internal consistency existed and the developed scale was reliable. The CR values are within suggested threshold criteria suggested by Nunnally (1978). All the values are represented in Table 5.

4.4.5. Assessment of construct validity

Convergent validity was tested to confirm whether all of the measured items denoted their respective factors (Chau, 1997). It assesses the extent to which two measures of the same construct are correlated compared to the extent they are related to theory (Hair et al., 2014). Construct validity was tested through the values of “composite reliability CR” which must be ≥ 0.7 (Nunnally and Bernstein, 1994), values of “average variance extracted (AVE)” which must be ≥ 0.5 (Fornell and Larcker, 1981), and all the items loading in CFA should be ≥ 0.6 (Nunnally and Bernstein, 1994). All the aforementioned criteria were met (Tables 5 and 7), and hence the study is free from convergent validity issues. Table 5 reflects that all the items in the study loaded very well on the five factors and all the items crossed over the desired threshold of 0.7 and above. All the values of AVE fell into the standardized acceptable limits (0.76–0.92), likewise all the values of CR also fell into standardized acceptable limits (0.88–0.97). AVE is considered to be a more consistent measure to evaluate convergent validity (Malhotra and Dash, 2016).

4.4.6. Discriminant validity

As per Hulland (1999), discriminant validity describes the degree to which the measures of one construct is different from the measures of the other measured construct within the same measurement model. To examine the discriminant validity we considered three parameters AVE, MSV (Maximum shared variance), and ASV (Average shared variance) and subsequently three criteria based on these parameters. First, the AVE should be higher MSV, second, AVE should be higher than ASV, and finally, the square root of AVE should be higher than its respective inter-construct correlations (Hair et al.,

Table 5
Reliability & Validity.

	CR	AVE	MSV	ASV	Personalization	Informativeness	Trendiness	Interactivity	WOM
Personalization	0.901	0.766	0.227	0.190	0.875				
Informativeness	0.973	0.923	0.202	0.180	0.449	0.961			
Trendiness	0.971	0.918	0.324	0.230	0.380	0.447	0.958		
Interactivity	0.973	0.923	0.324	0.230	0.455	0.373	0.569	0.961	
WOM	0.887	0.731	0.259	0.230	0.476	0.428	0.509	0.497	0.855

2014). It is evident from Table 5 that all the five dimensions of the scale met the aforementioned criteria with AVE (0.76–0.92), MSV (0.20–0.32), ASV (0.19–0.23), and the square root of AVE (0.85–0.96) is higher than its respective inter-construct correlations. Hence, we conclude that model was free from discriminant validity issues.

4.5. Scale validation (study 4)

To further validate the developed scale another round of data collection was carried out using structured questionnaire retaining the 15 items of perceived SMMA (Table 7), and also including items of like co-relates: brand equity and purchase intention (Table 6 and Fig. 1). The data were collected in Delhi over a ten week period. Delhi was chosen as it accounts for one of the highest numbers of social media users in India (Jain, 2017). All items were judged on a seven-point Likert scale where 1 = “strongly disagree,” and 7 = “strongly agree”. 375 responses were captured out of which 27 were eliminated due to incomplete data or data quality issues. Finally, 348 valid survey forms (which included 68 percent males and 32 percent females, with age ranging from 21 to 34 years) were retained. Only the respondents who were active participants of e-commerce SMMA, i.e., purchase goods from e-commerce sites (at least from the past two years) or from its social media links, provide ratings, reviews, and recommendations about a product after purchase from e-commerce sites, and/or refer to ratings, reviews, and recommendations provided by other consumers before making any new purchase (either on e-commerce website or social media sites like Facebook, Twitter, and YouTube etc.) were selected for the analysis. Respondents of the survey were invited to deliver their views about e-commerce platform of their choice in India. However, due to the absence of any list of e-commerce site members and its social media in India, we employed convenience sampling to collect data (Martin and Herrero, 2012).

To validate the proposed five-dimension structure, CFA was applied by keeping SMMA as second order construct (Table 6) as suggested in literature and theory (Godey et al., 2016; Ismail, 2017; Kim and Ko, 2012). All the fifteen items reflected significant loading on their respective dimensions (Table 7). The results of the CFA were examined and the results revealed an overall good model fit with the observed data; ($\chi^2 = 340.56$, $df = 162$, $p < 0.001$, $\chi^2/df = 2.10$ GFI = 0.91, AGFI = 0.90, NFI = 0.96, CFI = 0.98, TLI = 0.98, RMSEA = 0.05, PCLOSE = 0.10). The results also met the suggested range of “average variance extracted (AVE)” by Fornell and Larcker (1981). The AVE value of all the five factors was above 0.5 (Table 7). The construct reliability, construct validity, and discriminant validity (Table 6) also met the suggested range (Malhotra and Dash, 2016; Nunnally and Bernstein, 1994). Since every item reflected significant loading on their respective dimensions (Table 7 and Fig. 1) with no awkward estimate, therefore, the need of re-estimation of the model did not exist. The re-estimation for the first-order CFA model was due to the theoretical justification and conceptualization of SMMA as second order construct (Godey et al., 2016; Ismail, 2017). Taking SMMA as a higher order construct revealed a good model fit.

4.5.1. Assessment of nomological validity

The above-stated results strongly recommend that measures of perceived SMMA scale are consistent and have robust levels of convergent and discriminant validity. Furthermore, to endorse the effectiveness of the developed scale for both industry and academia, it is essential to explore whether the developed measure of SMMA possesses predictive validity. To assess the predictive/nomological validity, we developed hypotheses to examine the impact of SMMA on brand equity and purchase intention.

As a company's active participation in social media is a marketing activity to develop concrete relationship with customers and enhance organizations' profits, e-commerce companies' social media activity is anticipated to deliver positive effect on the brand equity and its purchase intention (Godey et al., 2016; Kim and Ko, 2012, 2010; Yadav et al., 2016).

Also, purchase intention has a strong association with attitude and liking toward a brand (Kim and Ko, 2010; Kim and Lee, 2009). As SMMA develops and enhances customer relationships which in turn develops a liking towards a company/brand, hence, SMMA is expected to have a positive impact on purchase intention (Aluri et al., 2016; Dutta and Bhat, 2016; Erkan and Evans, 2016; Hutter et al., 2013). Based on the above arguments, we conclude that perceived SMMA of e-commerce influences brand equity and purchase intention. Therefore, we propose:

- H1: Perceived SMMA have positive influence on brand equity
- H2: Perceived SMMA have positive influence on purchase intention

Information was sought to investigate the respondents' purchase intention from e-commerce sites and the e-commerce platform's brand equity. The perceived SMMA of e-commerce contained the 15 items validated in Study 4. Purchase intention was measured by three items which were adapted from (Lu et al., 2010). Brand equity was measured by two items which were adapted from (Ou et al., 2013).

Table 6

Validity Second order CFA-Study 4.

Construct	CR	AVE	MSV	ASV	PI	SMMA	BE
PI	0.90	0.76	0.11	0.07	0.872		
SMMA	0.84	0.51	0.04	0.03	0.158	0.713	
BE	0.96	0.92	0.11	0.07	0.335	0.186	0.960

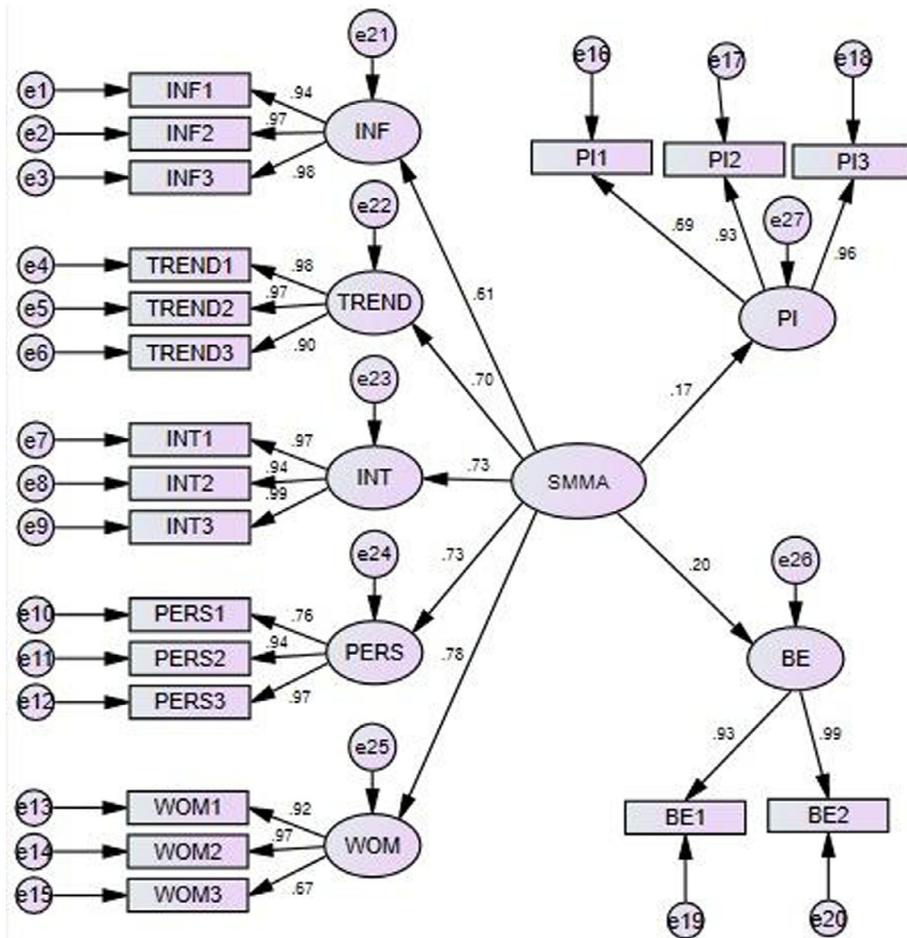


Fig. 1. Structural Model Nomological Validity. (INF = Informativeness, TREND = Trendiness, INT = Interactivity, PERS = Personalization, WOM = Word of Mouth, SMMA = Social Media Marketing Activities, BE = Brand Equity, PI = Purchase Intention).

The reliability of the scales adapted was tested by Cronbach's alpha and CR (composite reliability) and available in Table 6 which confirmed the appropriateness of the scale. Nomological validity was confirmed by testing the relationships (H1 & H2) in a structural model (Fig. 1). To inspect the predictive influence of perceived SMMA over purchase intention and brand equity, perceived SMMA was taken as a second-order construct with five factors at the first order in the structural model (Fig. 1). Results confirmed the reliability, robustness and validity of the model was good and fell within the acceptable limits ($\chi^2 = 372.54$, $df = 163$, $p < 0.001$, $\chi^2/df = 2.20$ GFI = 0.91, AGFI = 0.90, NFI = 0.95, CFI = 0.97, TLI = 0.97, RMSEA = 0.06). All path coefficients in the structural model (Fig. 1) were significant ($p < 0.01$). Thus, perceived SMMA positively influenced purchase intention ($\beta = 0.17$) and brand equity ($\beta = 0.20$); which confirms the nomological validity of the developed scale on perceived SMMA of e-commerce in line with the recommendations of Shimp and Sharma (1987).

4.5.2. Study 5 test-retest reliability

Test-retest reliability of perceived SMMA scale in e-commerce context is assessed in study 5. All the respondents (study 4) were approached once again after a period of one month for a follow-up survey. The questionnaire comprised of the same 15 items of perceived SMMA of e-commerce. We received 169 completed survey forms with a 48.56% response rate. Various tests were executed to check test-retest reliability. We performed paired sample *t*-test to evaluate the variations in correlations as well as means over a period of time amongst scale items. We computed test-retest Cronbach alpha as well as correlations for all the dimension of perceived SMMA. The outcomes of the paired *t*-test indicated comparative reliability in e-commerce customers' perceived SMMA over time. Only the second item of "word-of-mouth" was considerably higher in study 5, however, the mean values of the remaining items of all the five dimensions did not vary considerably over time. Therefore, relative reliability in perceived SMMA of e-commerce was established over different time periods. The average test-retest correlations over all five dimensions were 0.77 (from 0.65 to 0.84). Moreover, the Cronbach's alpha exceeded the suggested range (0.70) for all the dimensions of perceived SMMA of e-commerce. Overall, the findings suggest that perceived SMMA dimensions are relatively stable over the different time periods.

Table 7
SMMA Scale Factor Loadings & Descriptive Statistics (Study 3 and Study 4).

S.No.	Construct	Items	Study 3 (N = 344)			Study 4 (N = 348)	
			Factor Loadings (EFA)	Factor Loadings (CFA)	Mean (SD)	Factor Loadings (CFA)	Mean (SD)
Factor 1: Interactivity			$\alpha = 0.97$	CR = 0.97, AVE = 0.92	4.19 (1.58)	CR = 0.98, AVE = 0.93	4.15 (1.57)
1	INT1	E-commerce's social media allows me to share and update the existing content	0.905	0.98	4.25 (1.55)	0.97	4.27
2	INT2	This e-commerce brand interacts regularly with its followers and fans	0.866	0.92	4.13 (1.63)	0.94	4.05
3	INT3	E-commerce's social media facilitates two way interaction with family and friends.	0.907	0.98	4.20 (1.56)	0.99	4.13
Factor 2: Informativeness			$\alpha = 0.97$	CR = 0.97, AVE = 0.92	3.81 (1.76)	CR = 0.97, AVE = 0.93	3.80 (1.73)
1	INF1	E-commerce's social media offers accurate information on products	0.905	0.93	3.85 (1.73)	0.94	3.82
2	INF2	E-commerce's social media offers useful information	0.914	0.97	3.74 (1.76)	0.97	3.72
3	INF3	The information provided by e-commerce's social media is comprehensive	0.929	0.98	3.82 (1.77)	0.98	3.83
Factor 3: Personalization			$\alpha = 0.89$	CR = 0.90, AVE = 0.76	4.0 (1.51)	CR = 0.92, AVE = 0.80	3.85 (1.49)
1	PERS1	E-commerce's social media makes purchase recommendations as per my requirements	0.828	0.72	4.02 (1.54)	0.76	3.95
2	PERS2	I feel my needs are met by using e-commerce's social media	0.867	0.94	3.81 (1.49)	0.94	3.76
3	PERS3	E-commerce's social media facilitates personalized information search	0.877	0.95	3.85 (1.51)	0.97	3.85
Factor 4: Trendiness			$\alpha = 0.97$	CR = 0.97, AVE = 0.91	4.05 (1.69)	CR = 0.97, AVE = 0.91	4.01 (1.67)
1	TREND1	Contents visible on e-commerce's social media is the latest trend	0.897	0.99	4.06 (1.62)	0.98	4.02
2	TREND2	Using e-commerce's social media is really trendy.	0.892	0.97	4.00 (1.71)	0.97	4.00
3	TREND3	Anything trendy is available on e-commerce's social media	0.875	0.91	4.08 (1.74)	0.90	4.02
Factor 5: Word-of Mouth			$\alpha = 0.87$	CR = 0.88, AVE = 0.73	3.83 (1.85)	CR = 0.90, AVE = 0.75	4.07 (1.67)
1	WOM1	I would recommend my friends to visit e-commerce's social media	0.825	0.93	3.97 (1.89)	0.92	4.27
2	WOM2	I would encourage my friends and acquaintances to use e-commerce's social media	0.825	0.98	3.78 (1.85)	0.97	3.99
3	WOM3	I would like to share my purchase experiences with friends and acquaintances on e-commerce's social media	0.830	0.62	3.74 (1.81)	0.67	3.96

5. Implications

5.1. Theoretical implications

Marketing practitioners and academics have endorsed the significance of social media in marketing to retain and develop customer base (Kaplan and Haenlein, 2010; Kietzmann et al., 2011). It is also considered as a component of the marketing promotion mix (Mangold and Faulds, 2009). This study contributes to the existent literature on social media marketing (Baldus et al., 2015; Felix et al., 2017; Godey et al., 2016; Ismail, 2017; Kim and Ko, 2012) by developing an instrument to measure perceived SMMA in the e-commerce industry. Due to the non-existence of a scale that captures consumers' perceived SMMA in e-commerce, researchers and practitioners had to bank on old operationalization which may not be a pertinent measure of perceived SMMA in an e-commerce context. The current study has addressed this existing gap and offers a five dimensional (Interactivity, Informativeness, WOM, Trendiness, and Personalization) scale of perceived SMMA in an e-commerce context. This scale also offers a comprehensive foundation to extend the theoretical interpretation of SMM concept in e-commerce context by empirically investigating the consequences (brand equity and purchase intention) of SMMA of e-commerce. Theoretically, findings are consistent with e-commerce and social media literature in that e-commerce companies can enhance their brand equity (Godey et al., 2016; Kim and Ko, 2012) and purchase intent (Dutta and Bhat, 2016; Erkan and Evans, 2016) through social media marketing. This study offers the first comprehensive multi-dimensional scale

to measure perceived SMMA in e-commerce industry by conceptualizing social media marketing. It is crucial to note that the SMMA dimensions established here provide in-depth motivations of customers towards social media marketing of e-commerce. As majority of the customers buy online and participate in various SMMA of the e-commerce, hence, understanding perceived SMMA is of prime interest. Although social technologies or social media components have been widely incorporated in the e-commerce sites (e.g. Amazon, Flipkart etc.), its efficacy is rarely evaluated and confirmed in the extant literature (Lu et al., 2016). Our study has taken a step ahead by developing an instrument and assessing its predictive validity. Thus, this exhaustive investigation of perceived SMMA of e-commerce would enrich e-commerce and social media marketing literature by offering innovative perspectives on social media marketing of e-commerce

5.2. Managerial implications

The current study provides an important instrument to the e-commerce marketers for evaluating the effectiveness of their SMMA. The efficacy of SMMA of e-commerce can be evaluated with this scale by examining the perceived SMMA before and after the introduction of social media initiatives. This scale will help the social commerce managers to comprehend and enhance the customers' perception of SMMA developed by their e-commerce firms, as the marketers could appraise the existing perception and can create and enhance positive consumer perception accordingly. A thorough understanding of perceived SMMA would assist e-marketers to implement the relevant changes in social media tools on e-commerce sites as well as their activities on other prominent platforms (Facebook, Twitter etc.). For example, this scale will provide insights on the need of enhanced customer to company interactions, delivering customers more pertinent and tailored information which will eventually improve customer-company relationships and customer equity. Other crucial and potential application of the perceived SMMA scale are:

- The proposed scale will facilitate e-marketers to improve e-commerce effectiveness by collecting crucial information from this scale. For example, e-marketers can judge the performance of their e-commerce platform against competitors by appraising the SMMA conducted by them and the competitors. Such useful insights will facilitate managers in crafting innovative and customer-centric social media strategies to achieve anticipated objectives.
- This study validates that the perceived SMMA as a higher order construct of five dimensions, positively influencing purchase intention (PI) and brand equity (BE); and the core objective of any marketing firm is to enhance its brand equity. Thus, SMMA contributes as an efficient marketing communication technique. Also, to implement and design effective SMMA, e-commerce managers should emphasize the prominence of all the dimensions of SMMA due to their excellent factor loadings. Therefore, e-commerce firms should incorporate social media in a way to offer maximum interaction, provide accurate information about goods, offer customized product recommendations, and offer trendy products to motivate customers to share positive WOM.
- As all e-commerce brands make efforts to offer utmost value to customers, using the current scale to judge perceived SMMA will provide them useful insights on customers' perception, which will facilitate e-marketing practitioners enhance and develop relationships with current and prospective customers respectively. Therefore, more e-commerce firms should promote SMMA to achieve a positive contribution towards e-commerce brands.

6. Limitations & future research

As no research is impeccable, the present research also possesses some limitations that offer further research opportunities. First, the validity of this (perceived SMMA) scale needs to be confirmed in diverse industry contexts apart from e-commerce industry. Specifically, studies evaluating the difference in perceived SMMA in domestic e-commerce firms as well as global e-commerce firms, and how the various factors of perceived SMMA in e-commerce perform under diverse situational circumstances. Also, e-commerce is an internet-centered industry, further replications could assess the appropriateness of perceived SMMA scale across offline or non-internet industries employing longitudinal data.

Second, this study comprised only Indian customers. The outcomes plausibly extend to customers in other collectivist countries, however, this generalization demands confirmation. Particularly, studies exploring perceived SMMA dimensions in more individualistic nations and in nations that reveal higher (e.g., Philippines, Mexico, Malaysia) or lower (e.g., Germany, Japan, France) usage of social media (Statista, 2015). Third, the predictive validity of the developed scale (perceived SMMA) should be established by imminent research by examining the association between perceived SMMA and other behavioral outcomes like customer loyalty, revisit intention, willingness to pay etc. The fourth possibility for forthcoming research can be ascertaining antecedents and consequences of perceived SMMA. Fifth, the effect of other demographic factors' (age, gender, income etc.) as moderating variables could be another avenue for upcoming research.

References

- Aluri, A., Slevitch, L., Larzelere, R., 2016. The influence of embedded social media channels on travelers' gratifications, satisfaction, and purchase intentions. *Cornell Hospitality Q.* 57 (3), 250–267.
- American Marketing Association, 2017. Dictionary. Retrieved February 2, 2017, from American Marketing Association: <https://www.ama.org/resources/pages/dictionary.aspx?dLetter=R>.
- Baldus, B.J., Voorhees, C., Calantone, R., 2015. Online brand community engagement: scale development and validation. *J. Business Res.* 68 (5), 978–985.

- Barnes, N.G., Correia, D., 2016. Millennials and Social Commerce: Brands and Buy Buttons. Dartmouth: University of Massachusetts. Retrieved February 13, 2017, from <https://www.umassd.edu/cmr/socialmediaresearch/2016millennials/>.
- Bolton, R.L., Parasuraman, A., Hoefnagels, A., Migchels, N., Kabadayi, S., Gruber, T., Solnet, D., 2013. Understanding Generation Y and their use of social media: a review and research agenda. *J. Serv. Manage.* 24 (3), 245–267.
- Buchanan-Oliver, M., Fitzgerald, E.M., 2016. Industry and agency views of social media: Issues implementing dialogic communication. *J. Marketing Commun.* 22 (4), 437–454.
- Casey, S., 2017. 2016 Nielsen Social Media Report. US: Nielsen. Retrieved February 3, 2017, from <http://www.nielsen.com/content/dam/corporate/us/en/reports-downloads/2017-reports/2016-nielsen-social-media-report.pdf>.
- Chan, N.L., Guillet, B.D., 2011. Investigation of social media marketing: How does the hotel industry in hong kong perform in marketing on social media websites? *J. Travel Tourism Marketing* 28 (4), 345–368.
- Chang, Y.T., Yu, H., Lu, H.P., 2015. Persuasive messages, popularity cohesion, and message diffusion in social media marketing. *J. Business Res.* 68 (4), 777–782.
- Chau, P.Y., 1997. Reexamining a model for evaluating information center success using a structural equation modeling approach. *Decision Sci.* 28 (2), 309–334.
- Chi, H.H., 2011. Interactive digital advertising vs. virtual brand community: exploratory study of user motivation and social media marketing responses in Taiwan. *J. Interact. Advertising* 12 (1), 44–61.
- Choi, E.K., Fowler, D., Goh, B., Yuan, J., 2016. Social media marketing: applying the uses and gratifications theory in the hotel industry. *J. Hospitality Marketing Manage.* 25 (7), 771–796.
- Churchill, G.A., 1979. A paradigm for developing better measures of marketing constructs. *J. Mark. Res.* 16 (1), 64–73.
- Costello, A.B., Osborne, J.W., 2005. Best practices in exploratory factor analysis: four recommendations for getting the most from your analysis. *Pract. Assess. Res. Eval.* 10 (7), 1–9.
- Culnan, M.J., McHugh, P.J., Zubillaga, J.L., 2010. How large U.S. companies can use twitter and other social media to gain business value. *MIS Q. Executive* 9 (4), 243–260.
- DeVellis, R.F., 2016. Scale development: theory and applications. Sage, London.
- Dutta, N., Bhat, A., 2016. Exploring the effect of store characteristics and interpersonal trust on purchase intention in the context of online social media marketing. *J. Internet Commerce* 15 (3), 239–273.
- Erkan, I., Evans, C., 2016. Social media or shopping websites? The influence of eWOM on consumers intentions. *J. Marketing Commun.*, 1–17
- Facebook, 2017. Facebook Newsroom Stats. Retrieved February 3, 2017, from <http://newsroom.fb.com/company-info/>.
- Felix, R., Rauschnabel, P.A., Hinsch, C., 2017. Elements of strategic social media marketing: a holistic framework. *J. Business Res.* 70 (1), 118–126.
- Fornell, C., Larcker, D.F., 1981. Evaluating structural equation models with unobservable variables and measurement error. *J. Mark. Res.* 18 (1), 39–50.
- Frankwick, G.L., Ward, J.C., Hutt, M.D., Reingen, P.H., 1994. Evolving patterns of organizational beliefs in the formation of strategy. *J. Mark.* 58 (2), 96–110.
- Gerbing, D.W., Anderson, J.C., 1988. An updated paradigm for scale development incorporating unidimensionality and its assessment. *J. Mark. Res.* 25 (2), 186–192.
- Godey, B., Manthiou, A., Pederzoli, D., Rokka, J., Aiello, G., Donvito, R., Singh, R., 2016. Social media marketing efforts of luxury brands: Influence on brand equity and consumer behavior. *J. Business Res.* 69 (12), 5833–5841.
- Greenwood, S., Perrin, A., Duggan, M., 2016. Social Media Update-2016. Pew Research Center, Washington, D.C.
- Gronroos, C., 1994. From marketing mix to relationship marketing: towards a paradigm shift in marketing. *Manag. Decis.* 32 (2), 4–20.
- Gronroos, C., 1997. Keynote paper From marketing mix to relationship marketing - towards a paradigm shift in marketing. *Manag. Decis.* 35 (4), 322–339.
- Hair, J., Black, W., Babin, B., Anderson, R., 2014. *Multivariate Data Analysis*. Pearson, Edinburgh.
- Hajli, M., 2013. A research framework for social commerce adoption. *Inf. Manage. Comput. Secur.* 21 (3), 144–154.
- Hajli, M.N., 2014. The role of social support on relationship quality and social commerce. *Technol. Forecast. Soc. Chang.* 87, 17–27.
- Hajli, N., 2015. Social commerce constructs and consumer's intention to buy. *Int. J. Inf. Manage.* 35 (2), 183–191. <http://dx.doi.org/10.1016/j.ijinfomgt.2014.12.005>.
- Hajli, N., Sims, J., 2015. Social commerce: the transfer of power from sellers to buyers. *Technol. Forecast. Soc. Chang.* 94, 35–358.
- Hajli, M., Hajli, M., Khani, F., 2013. Establishing trust in social commerce through social word of mouth. *Int. J. Inf. Sci. Manage.* 11 (Special Issue), 39–53.
- Henry, G.T., 1990. *Practical Sampling*. Sage, Thousand Oaks, California.
- Hollebeek, L.D., Glynn, M.S., Brodie, R.J., 2014. Consumer brand engagement in social media: conceptualization, scale development and validation. *J. Interact. Mark.* 28 (2), 149–165.
- Hood, M., Day, T., 2014. Tech Trends for 2014: Don't Get Left Behind. Retrieved February 3, 2017, from http://directsellingnews.com/index.php/view/tech_trends_for_2014_dont_get_left_behind#WjRv4zhEDis.
- Hsieh, S.H., Shannon, S.E., 2005. Three approaches to qualitative content analysis. *Qual. Health Res.* 15 (9), 1277–1288.
- Huang, Z., Benyoucef, M., 2013. From e-commerce to social commerce: a close look at design features. *Electron. Commer. Res. Appl.* 12 (4), 246–259.
- Hulland, J., 1999. Use of partial least squares (PLS) in strategic management research: a review of four recent studies. *Strateg. Manag. J.* 20 (2), 195–204.
- Hutter, K., Hautz, J., Dennhardt, S., Fuller, J., 2013. The impact of user interactions in social media on brand awareness and purchase intention: the case of MINI on Facebook. *J. Product Brand Manage.* 22 (5/6), 342–351.
- Internet World Stats, 2016. World internet usage and population statistics june 30, 2016 – Update. Retrieved February 14, 2017, from Internet World Stats: Usage and Population statistics: <http://www.internetworldstats.com/stats.htm>.
- Islam, J., Rahman, Z., 2016. Linking customer engagement to trust and word-of-mouth on facebook brand communities: an empirical study. *J. Internet Commerce* 15 (1), 40–58.
- Islam, J.U., Rahman, Z., 2017. The impact of online brand community characteristics on customer engagement: an application of Stimulus-Organism-Response paradigm. *Telematics Inform.* 34 (4), 96–109.
- Ismail, A.R., 2017. The influence of perceived social media marketing activities on brand loyalty the mediation effect of brand and value consciousness. *Asia Pacific J. Mark. Logist.* 29 (1), 129–144.
- Jain, S., 2017. 101 latest social media facts and stats from India 2016. Retrieved from Social Media & Digital Marketing Blog: <http://www.soravjain.com/social-media-facts-and-stats-india-2016>.
- Kaplan, A.M., Haenlein, M., 2010. Users of the world, unite! The challenges and opportunities of Social Media. *Bus. Horiz.* 53 (1), 59–68.
- Kietzmann, J.H., Hermkens, K., McCarthy, I.P., Silvestre, B.S., 2011. Social media? Get serious! Understanding the functional building blocks of social media. *Bus. Horiz.* 54 (3), 241–251.
- Kim, A.J., Ko, E., 2010. Impacts of luxury fashion brand's social media marketing on customer relationship and purchase intention. *J. Global Fashion Mark.* 1 (3), 164–171.
- Kim, A.J., Ko, E., 2012. Do social media marketing activities enhance customer equity? An empirical study of luxury fashion brand. *J. Business Res.* 65 (10), 1480–1486.
- Kim, H.J., Lee, H.Z., 2009. The effect of the well-being consumer value orientations, the perceived value and brand preference on purchase intention of the environment-friendly cosmetic. *J. Korean Soc. Clothing Ind.* 15 (1), 327–348.
- Kim, J.O., Mueller, C.W., 1978. *Introduction to Factor Analysis: What It Is and How to Do It*, vol. 13. Sage, Beverly Hills, California.
- Kim, S., Park, H., 2013. Effects of various characteristics of social commerce (s-commerce) on consumers' trust and trust performance. *Int. J. Inf. Manage.* 33 (2), 318–332.
- Knops, A.M., Storm-Versloot, M.N., Mank, A.P., Ubbink, D.T., Vermeulen, H., Bossuyt, P.M., Goossens, A., 2010. Factors influencing long-term adherence to two previously implemented hospital guidelines. *Int. J. Qual. Health Care* 22 (5), 421–429.

- Kozinets, R.V., de Valck, K., Wojnicki, A.C., Wilner, S.J., 2010. Networked narratives: understanding word of mouth marketing in online communities. *J. Mark.* 74 (2), 71–89.
- Krueger, R.A., Casey, M.A., 2009. *Focus Groups: A Practical Guide for Applied Research*. Sage, Los Angeles, California.
- Kurasaki, K.S., 2000. Intercooder reliability for validating conclusions drawn from open-ended interview data. *Field Methods* 12 (3), 179–194.
- Lee, S.-Y.T., Phang, C.D., 2016. Leveraging social media for electronic commerce in Asia: research areas and opportunities. *Electron. Commer. Res. Appl.* 14 (3), 145–149.
- Liang, T.-P., Turban, E., 2014. Introduction to the special issue social commerce: a research framework for social commerce. *Int. J. Electron. Commerce* 16 (2), 5–13.
- Liang, T.P., Ho, Y.T., Li, Y.W., Turban, E., 2011. What drives social commerce: the role of social support and relationship quality. *Int. J. Electron. Commerce* 16 (2), 69–90.
- Lincoln, Y.S., Guba, E.G., 1985. *Naturalistic Inquiry*. Sage, London, United Kingdom.
- Lombard, M., Snyder-Duch, J., Bracken, 2002. Content analysis in mass communication: assessment and reporting of intercoder reliability. *Human Commun. Res.* 28 (4), 587–604.
- Lu, C.J., Shulman, S.W., 2008. Rigor and flexibility in computer-based qualitative research: Introducing the Coding Analysis Toolkit. *Int. J. Multiple Res. Approaches* 2 (1), 105–117.
- Lu, Y., Zhao, L., Wang, B., 2010. From virtual community members to C2C e-commerce buyers: Trust in virtual communities and its effect on consumers' purchase intention. *Electron. Commer. Res. Appl.* 9 (4), 346–360.
- Lu, B., Fan, W., Zhou, M., 2016. Social presence, trust, and social commerce purchase intention: An empirical research. *Comput. Hum. Behav.* 56, 225–237.
- MacPhail, C., Khoza, N., Abler, L., Ranganathan, M., 2016. Process guidelines for establishing intercoder reliability in qualitative studies. *Qual. Res.* 16 (2), 1–15.
- Malhotra, N.K., Dash, S., 2016. *Marketing Research: An Applied Orientation*. Pearson, Noida, India.
- Mangold, W.G., Faulds, D.J., 2009. Social media: the new hybrid element of the promotion mix. *Bus. Horiz.* 52 (4), 357–365.
- Martin, H.S., Herrero, A., 2012. Influence of the user's psychological factors on the online purchase intention in rural tourism: integrating innovativeness to the UTAUT framework. *Tourism Manage.* 33 (2), 341–350.
- Morgan, D.L., 1996. Focus Groups. *Ann. Rev. Sociol.* 22 (1), 129–152.
- MSI, 2014. 2014–16 Research Priorities. Marketing Science Institute, Cambridge. Retrieved from http://www.msi.org/uploads/files/MSI_RP14-16.pdf.
- MSI, 2016. 2016–18 Research Priorities. Marketing Science Institute, Cambridge. Retrieved from http://www.msi.org/uploads/articles/MSI_RP16-18.pdf.
- Nadeem, W., Andreini, D., Salo, J., Laukkanen, T., 2015. Engaging consumers online through websites and social media: A gender study of Italian Generation Y clothing consumers. *Int. J. Inf. Manage.* 35 (4), 432–442.
- Nunnally, J.C., 1978. *Psychometric Theory*. McGraw-Hill, New York.
- Nunnally, J.C., Bernstein, I.H., 1994. The assessment of reliability. *Psychometric Theory* 3 (1), 248–292.
- Ou, Y.C., De Vries, L., Wiesel, T., Verhoef, P.C., 2013. The role of consumer confidence in creating customer loyalty. *J. Service Res.* 17 (3), 339–354.
- Pham, P.H., Gammoh, B.S., 2015. Characteristics of social-media marketing strategy and customer-based brand equity outcomes: a conceptual model. *Int. J. Internet Mark. Advertising* 9 (4), 321–337.
- Rapp, A., Beitelspacher, L., Grewal, D., Hughes, D., 2013. Understanding social media effects across seller, retailer, and consumer interactions. *J. Acad. Mark. Sci.* 41 (5), 547–566.
- Sampath, S., 2001. *Sampling Theory and Methods*. CRC Press, Boca Raton, Florida.
- Shimp, A.T., Sharma, S., 1987. Consumer ethnocentrism: construction and validation of the CETSCALE. *J. Mark. Res.* 24 (3), 280–289.
- Spiggle, S., 1994. Analysis and interpretation of qualitative data in consumer research. *J. Consum. Res.* 21 (3), 491–503.
- Statista, 2015. Average numbers of hours per day spent by social media users on all social media channels as of 4th quarter 2015, by country. Retrieved March 3, 2017, from Statista: The Statistics Portal: <https://www.statista.com/statistics/270229/usage-duration-of-social-networks-by-country/>.
- Stephen, A.T., Toubia, O., 2010. Deriving value from social commerce networks. *J. Mark. Res.* 47 (2), 215–228.
- Taubenheim, A.M., Long, T., Smith, E.C., Jeffers, D., Wayman, J., Temple, S., 2008. Using social media and internet marketing to reach women with the heart truth. *Social Mark. Q.* 14 (3), 58–67. <http://dx.doi.org/10.1080/15245000802279433>.
- Tedeschi, B., 2006. Like Shopping? Social Networking? Try Social Shopping. Retrieved January 15, 2017, from The New York Times: <http://www.nytimes.com/2006/09/11/technology/11ecom.html>.
- Tuten, T.L., Solomon, M.R., 2016. *Social Media Marketing*. Sage Texts, New Delhi, India.
- Weber, R.P., 1990. *Basic Content Analysis*. Sage, Beverly Hills, California.
- Willemsen, R., Abraham, J., Welie, R.V., 2016. Global B2C E-commerce Report 2016. Amsterdam: E-Commerce Foundation. Retrieved February 2, 2017, from https://www.ecommercewiki.org/wikis/www.ecommercewiki.org/images/5/56/Global_B2C_Ecommerce_Report_2016.pdf.
- Workman, B., Adler, E., 2014. THE SOCIAL-COMMERCE REPORT: Social Networks Are Driving More Online Sales And Influencing Offline Purchases. Retrieved January 24, 2017, from Business Insider: <http://www.businessinsider.in/THE-SOCIAL-COMMERCE-REPORT-Social-Networks-Are-Driving-More-Online-Sales-And-Influencing-Offline-Purchases/articleshow/42742966.cms>.
- Yadav, M., 2017. Social media as a marketing tool: opportunities and challenges. *Indian J. Mark.* 47 (3), 16–28.
- Yadav, M., Rahman, Z., 2017. Social media marketing: literature review and future research directions. *Int. J. Business Inf. Syst.* 25 (2), 213–240.
- Yadav, M.S., De Valck, K., Hennig-Thurau, T., Hoffman, D.L., Spann, M., 2013. Social commerce: a contingency framework for assessing marketing potential. *J. Interact. Mark.* 27 (4), 311–323.
- Yadav, M., Kamboj, S., Rahamn, Z., 2016. Customer co-creation through social media: the case of 'Crash the Pepsi IPL 2015'. *J. Direct Data Digital Mark. Practice* 17 (4), 259–271.
- Yan, Q., Wu, S., Wang, L., Wu, P., Chen, H., Wei, G., 2016. E-WOM from e-commerce websites and social media: Which will consumer adopt. *Electron. Commerce Res. Appl.* 17, 62–73.
- Zhang, H., Lu, Y., Gupta, S., Zhao, L., 2014. What motivates customers to participate in social commerce? The impact of technological environments and virtual customer experiences. *Inf. Manage.* 51 (8), 1017–1030.

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