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# Achieving consumers' attention through emerging technologies

Achieving  
consumers'  
attention

## The linkage between e-marketing and consumers' exploratory buying behavior tendencies

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### Abstract

**Purpose** – The purpose of this paper is to investigate the relationship between e-marketing (eM) and consumers' buying behavior particularly exploratory buying behavior tendencies (EBBT) with moderating effect of a gender in the context of China.

**Design/methodology/approach** – Structural equation modeling using SPSS/AMOS was majorly applied to ascertain the relationship and hypotheses testing. First, the correlation of eM toward EBBT is examined using five factors: internet marketing (IM), e-mail marketing (EMa), intranet marketing (IMa), extranet marketing (EM), and mobile marketing (MM). Second, the relationship of each dimension of the eM model is determined autonomously to ensure the importance of such emerging technologies in marketing communications. Third, the effect of gender as a moderator is measured. To this end, primary data were collected through random distribution of the questionnaires among 1,600 consumers particularly students of the universities between February 2016 and August 2016 within North China.

**Findings** – The findings revealed that eM has a significant correlation on consumers' EBBT. The comprehensive analysis of each factor of eM, i.e., IM, EMa, IMa, EM, and MM is positively correlated to EBBT. The present study revealed that gender did not moderate among the relationships of eM and EBBT. Additionally, study furnishes practical directions on how managers can utilize such emerging and revolutionary technologies in marketing activities to probe, understand, and reinforce consumers' buying behavior.

**Research limitations/implications** – The research has limitations related to geographical location and sample size which thus limits the widespread generalization.

**Practical implications** – This study affirmed that organizations must engage the consumers using such technologies that are more likely acceptable by consumers in the present customer-oriented and digital era. The marketers must engage consumers the way they wish to be engaged by developing appropriate promotional strategies. The study provides possible implications both theoretical and managerial along with a contribution to the literature of eM and consumers' buying behavior.

**Social implications** – Understanding the emerging technologies may furnish valuable insights for individuals to work well within Chinese SMEs.

**Originality/value** – The topic of eM has acknowledged as an evolving concept which is gaining an intense concern of both academicians and practitioners. Therefore, more research mainly empirical work is still needed to probe the insights of eM across the globe. This study attempts to fulfill such need with empirical evidence together with an in-depth examination of eM determinants, collectively and autonomously.

**Keywords** Consumers' insights, Electronic marketing (eM), Exploratory buying behavior tendencies (EBBT), Mobile and e-mail marketing, People Republic of China

**Paper type** Research paper

### 1. Introduction

The emergence of the wireless networks and immense technological diffusion has dramatically transformed the human life toward latest means of technology decades ago. The widespread e-adoption among consumers creates new opportunities for the

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organizations to communicate the product information in a fast and effective way (Wei *et al.*, 2006; Smutkupt *et al.*, 2010; Persaud and Azhar, 2012). In contrast, understanding the consumers' buying behavior is critical for the organizations to seize superior market attention. Many academics have argued that to probe the factors of consumer's buying behavior is an imperative for firms. Organizations can never ignore the applications of technologies in business operations to survive in today's business scenario (Ho *et al.*, 2011). The adoption of the technology is vital for all business activities to gain success (Eid and Trueman, 2004). The growth of informatics has remarkably examined along with positive outcomes of e-marketing (eM) in the past decades (Venkatesh and Davis, 2000; Chaffey and Smith, 2007; Brodie *et al.*, 2007; Rondan-Cataluña *et al.*, 2015). The internet has become a crucial part of the information technology which is still flourishing rapidly as a global network (Hamill and Gregory, 1997; Mathews *et al.*, 2016). According to RCIU (2017), nearly 40 percent population of the world is the internet users, which was probably 1.0 percent in the 1990s. It infers the higher increasing rate of the internet users and transforming tendency toward e-adoption.

Firms adopt several internet-based promotional methods to appeal a particular target market by spending a massive budget. Brodie *et al.* (2007) suggested that advertising aids deliver information of a product or service to achieve consumers' attention more productively, while advertising through the internet is becoming a priority of various practitioners for swift dissemination of the information. The internet potentially facilitates organizational sales and supports diverse marketing practices (Jeffery *et al.*, 2017; Brodie *et al.*, 2007).

eM is a process to communicate the product information by means of the internet (El-Gohary, 2012; Gilmore *et al.*, 2007). eM is a thriving mechanism that endows with a platform for all kinds of the electronic campaigns using the internet-based technologies (Strauss, 2016). Brodie *et al.* (2007) stated that eM is a source of dialogues between customers and organization with the use of the interactive technologies. In the past decade, Coviello *et al.* (2001) have presented the model consisted of distinct marketing practices such as interaction marketing, database marketing, transaction marketing, and network marketing. With the passage of time, Coviello *et al.* (2001) identified a new component of marketing activities that is known as eM. Thereafter, the researchers focused on the study of eM in distinct contexts and dimensions (e.g., Gilmore *et al.*, 2007; Brodie *et al.*, 2007; Chang *et al.*, 2009; El-Gohary, 2012).

The researchers have claimed that more research is required on eM mainly empirical evidences are needed across the globe which might be conducted within three perspectives, e.g., B2C, B2B, and B2G perspectives (Eid and Trueman, 2004; El-Gohary, 2012). The integration of technological advancement is critical for business practices to achieve business efficiency (Eid and Trueman, 2004). Several researchers have been conducted the empirical examinations on different internet-based promotional mediums, including e-mail marketing (EMa) (Scharl *et al.*, 2005), mobile marketing (MM) (Bauer *et al.*, 2005), interaction marketing (Brodie *et al.*, 2007), network marketing (Brodie *et al.*, 2007), intranet marketing (IMa) (Neill and Richard, 2012), and internet marketing (IM) (Mathews *et al.*, 2016). The connection of eM, especially on consumers' perspectives, is not well researched concerning to EBBT. Therefore, we adopted exploratory buying behavior tendencies (EBBT) that consisted of two core parts, i.e., exploratory information seeking (EIS) and exploratory acquisition of product (EAP) where such tendencies are further associated with a study of Raju (1980). EAP part is concerned with sensory stimulation of the consumer, while EIS is related to cognitive stimulation. Baumgartner and Steenkamp (1996) believed that consumers with greater EBBT are more curious about information being contained in marketing campaigns relatively than low EBBT. The current study strives to explore the correlation between eM and EBBT from B2C perspective. Notably, all previous studies have

been performed in unlike contexts and no known study examined the relationship between eM model and two-factor conceptualization of EBBT in the context of the People Republic of China with moderating effect of the gender.

China is the world's highest populated country with 1.9 billion populations and 3.0 percent annual growth rate (World Meters, 2017). The higher number of the Chinese population is the internet users which is probably 53 percent (RCIU, 2017). We collected surveys response from Chinese students where nearly every student is the internet and mobile user. Besides, it is observed that 85 percent students use internet on mobile devices (m-devices), while 15 percent use on remainder electronic gadgets (see Table I). It is also reported that probably every student of university level uses m-devices in China and Middle East countries (Schuster *et al.*, 2016). It reflects a huge market and growing trend among consumers. Therefore, it is vital for the advertisers to develop the effective and creative strategies to probe consumers' interest (Loureiro and Kaufmann, 2017).

Demographic characteristics	Male		Female	
	Frequency	%	Frequency	%
Gender	600	44.4	750	55.6
<i>Age (years)</i>				
18-23	234	39.0	281	37.5
24-28	180	30.0	204	27.2
29-34	110	18.3	145	19.3
More than 35	076	12.7	120	16.0
<i>Marital status</i>				
Unmarried	526	87.7	656	87.2
Married	074	12.3	096	12.8
<i>Education</i>				
Bachelor	244	40.7	315	42.0
Master	177	28.3	180	24.0
MPhil/MS	106	17.7	160	21.3
PhD/others <sup>a</sup>	080	13.3	095	12.7
<i>Year of education in the university (years)</i>				
1-2	170	28.3	195	26.0
3-4	272	45.3	305	40.7
5-6	120	20.0	175	23.3
> 6	038	06.3	075	10.0
<i>Since using mobile/smart phones (years)</i>				
2-4	040	06.7	045	6.00
5-7	170	28.3	190	25.3
8-10	270	45.0	300	40.0
> 10	120	20.0	215	28.7
<i>Since using E-mails (years)</i>				
2-4	025	03.7	020	02.7
5-7	090	12.8	100	13.3
8-10	180	25.7	215	28.7
> 10	405	57.8	415	55.3
<i>Frequently use Internet</i>				
Use on mobile devices	535	89.2	610	81.3
Use on tablets/laptop, etc.	065	10.8	140	18.7

**Notes:**  $n = 1,350$ . <sup>a</sup>Other professional degree/diploma or remainder courses

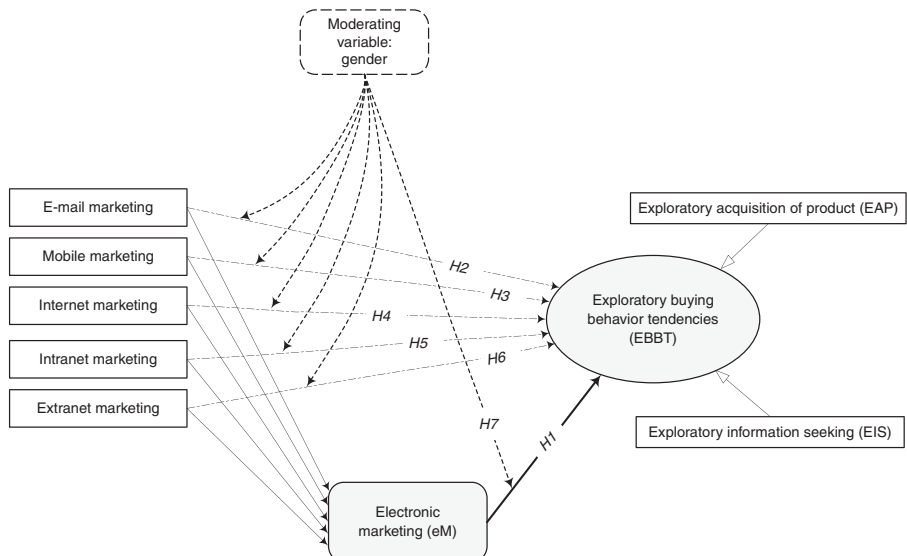
**Table I.**  
Demographic findings

According to Ling *et al.* (2010), advertising performs a dominant role to develop consumer's attitude during all stages, especially during the process of brand awareness. Brengman *et al.* (2001) addressed that weak advertising campaign might have an adverse impact on the psyche of consumers. It is critically essential to select more efficient promotional method to reinforce the target market. Currently, the intention is to yield empirical evidence by investigating the relationships of eM and EBBT from B2C perspective.

First, the objective is to examine a relationship between eM and EBBT using five sub-dimensions of eM, i.e., IM, extranet marketing (EM), IMa, MM, and EMa. Second aim is to determine the association between MM and EBBT. Third aim is to evaluate the linkage between EMa and EBBT. Fourth objective is to examine the relationship between IM and EBBT. Fifth objective is to determine the correlation between IMa and EBBT. Sixth, the goal is to explore the relationship between EM and EBBT. Likewise, final objective is to explore the role of gender as a moderator between the relationship of eM and EBBT along with the autonomous relationships among all constructs of eM and EBBT (see Figure 1). Furthermore, this study is outlined as follows. The literature review together with research framework and hypotheses formation is presented to next. Subsequently, research methodologies, i.e., sampling procedure, measures, and data analysis techniques are accordingly laid down. Third, statistical results, hypotheses testing, discussion, and applications are shown. The final section consists of limitations and future directions, respectively.

## 2. Literature review and study framework

eM has been defined by several researchers and practitioners, such as Barwise and Farley (2005), who explained eM as a communication by employing internet-based technologies. Hooley *et al.* (2004) stated that eM is the marketing process using internet, while Strauss (2016) believed that eM is not limited to the web networks, however, reflects an electronic point of sale. Strauss (2016) described eM as a computerized database of the consumers. According to Chaffey and Smith (2007), eM is often used as a synonym of IM. eM is the dialogues between organizations and consumers using internet (Gilmore *et al.*, 2007).



**Figure 1.**  
Research framework

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Brodie *et al.* (2007) described eM as a source of communication using interactive technologies that often recognized as e-business and e-commerce. eM is cutting-edge to obtain the higher attention of target consumers (Coviello *et al.*, 2001; El-Gohary, 2012). Strauss (2016) suggested that eM has a wider scope that might be adopted for the non-business purpose along with promotional activities. For example, it is reported that Mr Obama (Ex-president, USA) won an election of 2008 by successful promotional campaigns using eM channels (Strauss, 2016).

Gilmore *et al.* (2007) argued that eM is an operational activity with the use of World Wide Web. Taylor and Strutton (2010) believed that eM is associated with e-behavior. According to Brodie *et al.* (2007), eM performs an important role to enhance organizational performance. Dann and Dann (2011) explained eM is a communication channel having multiple interactive tools based on a particular market condition. Some other researchers have described the concept of eM, such as Kalyanam and McIntyre (2002), reported 30 elements of eM, including banner ads, e-mails, electronic coupons, individualism, ordering tool, meta ads, remote hosting, viral marketing, as well as different auctions based on the internet. According to Day and Bens (2005), eM aids to grasp higher opportunities in the present competitive environment. eM is a process that facilitates to manage the customer relationship (Gilmore *et al.*, 2007). Taylor and Strutton (2010) have suggested that such process is consisting of internet-based technologies.

Consumers' behavior is linked to buying tendency to purchase a product or service where several factors are observed influencing on buying intention, including family, friends, brand name, society, and the quality of a product (Czinkota and Kotabe, 2001). According to Constantinides (2004), there are five primary stages in consumers' buying behavior such as identification of need, information seeking, alternatives selection, decision to buy, and post-purchase evaluation decision. Kotler (2009) suggested that buying behavior of the consumers is a behavioral and cognitive process that is involved in high-degree items, while consumers' behavior is widely studied and extensive work has been disseminated on different perspective concerning to buying behavior, e.g., impulse buying behavior, exploratory, and online buying behavior. Several studies have been focused to assure the significance of eM across the world, e.g., Wu *et al.* (2003), Drennan and McColl-Kennedy (2003), Brodie *et al.* (2007), and Khan and Motiwalla (2002). Taylor and Strutton (2010) claimed that adoption of eM is an imperative for the organizations.

How to seize consumers' behavior is always critical for the organizations where advertising contributes a dynamic role driving consumers' buying tendencies. It is exceptionally crucial to focus on the advertising activities. Because advertising of a product is an important and top priority for the organizations. Carat (2015) reported that likely USD529 billion were expected to spend on advertising around the globe till 2016. It reveals that organizations are well aware of the effective advertising tools. Kotler (2009) believed that advertising enhances an image of the firms along with sales efficiency. McAlexander *et al.* (2002) suggested that advertising is a supporting channel to build a brand name. However, a variety of traditional advertising approaches are operational in the marketplace decades ago, e.g., shopping cards, print media, outdoor media advertising, exhibitions, personal selling, direct marketing, and publicity (Lichtenthal *et al.*, 2006). The ultimate purpose of an advertising campaign is to win consumer's intent by a proper presentation of a particular product or service (Ansari and Riasi, 2016).

An extensive literature is available on the significance of the traditional and contemporary methods of the advertisement that drive consumers' interest. The relationships of EBBT have widely been studied by researchers in consumers' research within diverse contexts, i.e., Chowdhury *et al.* (2009) and Orth and Bourrain (2005). In comparison, researchers have revealed the positive relationships of eM toward distinct

types of consumers' behavior and organizational performance (e.g. Coviello *et al.*, 2001; Brodie *et al.*, 2007; Gilmore *et al.*, 2007; Taylor and Strutton, 2010; El-Gohary, 2012; Tsiotsou and Vlachopoulou, 2011). Chang *et al.* (2009) measured the impact of customers' satisfaction and service quality on eM. Tsiotsou and Vlachopoulou (2011) examined the impact of eM on firm' service performance. Brodie *et al.* (2007) determined a positive effect of eM on firms' performance. Even though, the literature on eM still lacks and no known study exists measuring eM relationships to EBBT, specifically from China. Besides, academicians and experts recommended further work across the nations, especially comprehensive assessment of eM and associated technologies in different context and marketing practices, e.g., Chowdhury *et al.* (2009), El-Gohary (2012), and Gilmore *et al.* (2007). This study attempts to fulfill such need by conducting a comprehensive examination between eM and EBBT models together with moderating effect of the gender for empirical contribution to the respective literature from China. To this end, the following relationships are proposed and subsequently explained (see Figure 1).

## 2.1 Hypotheses formation

*2.1.1 eM.* Several academic experts have stated that information technology and information system (IS) play a vital role supporting marketing activities (Brodie *et al.*, 2007; Ho *et al.*, 2011; Rondan-Cataluña *et al.*, 2015). Organizations might attain competitive edge with an integration of advanced technological-based tactics such as eM (Day and Bens, 2005). According to Brodie *et al.* (2007), eM is positively correlated to the performance of an enterprise. Eid and Trueman (2004) described that sustainable competitive advantages are essential for the organization where eM may aid to achieve such sustainability and competitive advantages. eM plays a critical role in managing relationship toward distinct customers and end-users (Gilmore *et al.*, 2007) with an ease of informational access concerning to a product (Loane *et al.*, 2004). The relationships between e-business and organizational performance have widely been studied by several experts, including the study of Khan and Motiwalla (2002), Garbi (2002), Domke-Damonte and Levsen (2002), Wu *et al.* (2003), and Drennan and McColl-Kennedy (2003).

El-Gohary (2012) presented the five-dimensional model of eM and suggested that study on eM is still needed in unlike perspectives, i.e., B2B, B2G, and B2C, especially to explore more findings across the globe to ensure the significance of such flourishing technologies in marketing communication. The aim of the advertising is information sharing where eM is an important and thriving method to manage the relationships with the consumers (Gilmore *et al.*, 2007). According to Brodie *et al.* (2007), eM may support to obtain the long-term relationship with consumers. eM is a new technique that might be tested across the world (Barwise and Farley, 2005; Eid and Elbeltagi, 2006). The scope of eM is not limited to a specific region nonetheless is a valuable mechanism to deliver the product message within the country and across the country (Loane *et al.*, 2004). Based on a widespread significance of eM that it can perform a winning role to achieve a higher attention of a target market in the current digital age, the following relationship is hypothesized:

*H1.* eM is positively correlated to EBBT.

*2.1.2 EMa.* According to Sterne and Priore (2000), EMa is defined as a communication channel by means of the internet to disseminate product information. EMa has become the leading channel of information sharing (Vladimir, 1996; Sterne and Priore, 2000). A computer engineer accomplished the first e-mail testing in the 1971 (Tomlinson, 2009). After that, e-mail has become an essential element of business operations maintaining customers' relationship since the 1990s (McCloskey, 2006, Pavlov *et al.*, 2008). Bawm and Nath (2014) believed that EMa ensures the higher return on investment (ROI). Pavlov *et al.* (2008) have claimed that

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advertisement using e-mails may facilitate to establish the long-term relationship with different customers effectively and broadly. EMa empowers organizational communications to be connected with consumers in order to create brand awareness (Mullen and Daniels, 2011). In contrast, several ethical considerations in EMa might play a productive role where Windham and Orton (2000) suggested that e-mails must undergo a permission-based process to avoid any annoying issue from recipient's side. According to Bawm and Nath (2014), EMa is most trusted and swift medium of communication. Nowadays, marketing using e-mails is widely growing because of an extensive usage and nearly 2.5 billion people are e-mail users around the globe which is expected to further grow likely 2.8 billion till 2018 (Bawm and Nath, 2014). EMa is a cost and time effective medium that supports the advertisers to spread the product information (Bawm and Nath, 2014; Cases *et al.*, 2010). Furthermore, researchers have stated that more research is needed to examine the significance of EMa (Chittenden and Rettie, 2003; Mullen and Daniels, 2011). With relation to this, EMa may perform a useful role to reinforce consumers' exploratory buying behavior. We hypothesized the following relationship:

*H2.* EMa is positively correlated to EBBT.

*2.1.3 MM.* MM is defined as an advertising tactic using mobile phones, smartphones, and other electronic gadgets together with several features, including short messaging service (SMS), wireless application protocol (WAP), JAVA, mobile apps, and multimedia messaging service (MMS) (Leppaniemi *et al.*, 2006; Smutkupt *et al.*, 2010; Persaud and Azhar, 2012). MM is an effective marketing tool which produces more opportunities for organizations to communicate product message anytime, anywhere, and in a wider range (Brodie *et al.*, 2007; Chang *et al.*, 2009; Lee *et al.*, 2017). Scharl *et al.* (2005) and Chittenden and Rettie (2003) described that promotion of a product or service using m-devices enables the firms to disseminate information using unlike sub-functions, e.g., SMS, MMS, JAVA, Bluetooth, WAP, and Social APPs. According to Coviello *et al.* (2001), MM is a most effective method of marketing communication in today's business situation. In contrast, researchers have argued that research on MM is still on primary stages and further work is explicitly required specifically empirical linkages across the world (Smutkupt *et al.*, 2010; Varnali and Toker, 2010; Eid and Trueman, 2004; Wei *et al.*, 2006; El-Gohary, 2012).

The relationships of different features of m-devices have solely examined by researchers in distinct contexts and ensured the significance of each dimension in marketing communications (Barwise and Strong, 2002; Smutkupt *et al.*, 2010; Scharl *et al.*, 2005; Jensen and Jepsen, 2008; Lin *et al.*, 2017). Such scholars have suggested that all sub-attributes of m-devices empower the promotional campaigns by engaging the consumers directly through their smartphones and rest of electronic gadgets. Consequently, based on expert's suggestions that further relationships can be investigated because of an extensive utilization of m-devices and promotional campaign through such methods can perform a dynamic role to reinforce consumers' exploratory buying behavior, the following hypothesis is formed:

*H3.* MM is positively correlated to EBBT.

*2.1.4 IM.* IM is defined as a revolutionary source of information sharing in promotional activities that help to promote a product for consumers, businesses, and investors (Stewart and Zhao, 2000). IM consists of numerous dimensions and marketers may adopt several internet-based methods to transmit the message of a product or service (Richardson, 2000; Hamill and Gregory, 1997). According to Hamill and Gregory (1997), IM consists of numerous supporting features, e.g., e-banners, e-mails (e.g., text, voice, and video), video conferences, Internet Relay Chat (IRC), and Multi Users Dialogues (MUDS). Moreover, IM supports to



create the relationships between buyers and sellers more broadly (Ismail *et al.*, 2017). According to Stewart and Zhao (2000), the IM is an advanced tool which facilitates the firms to broadcast product information comprehensively than conventional marketing methods. The internet performs a fashionable role to benefit the consumer with maximum information in the present digital age (Stewart and Zhao, 2000).

Ismail *et al.* (2017) suggested that more research would be expanded in future by emphasizing on such tactics to achieve supreme attention of the consumers. El-Gohary (2012) has been examined the relationship of an IM as a sub-dimension of eM within Egyptian tourism organizations and argued that additional empirical work is required to establish more shreds of evidence. The concept of an IM is significant for businesses that facilitate several capabilities such as online advertising through distinguished methods (e.g. social network sites, viral campaigns, e-banners, blogs, and digital ads), supporting different stages during selling process, and has a potential to appeal the customers in a broader way (Bianchi and Mathews, 2016; Coviello *et al.*, 2001). Our study hypothesized the following relationship considering IM can perform an effective role to reinforce consumers' exploratory buying behavior:

*H4.* IM is positively correlated to EBBT.

*2.1.5 IM and EM.* Intranet and extranet are two interrelated concepts with respect to marketing where intranet is defined as a private network inside the firm and consisted of unlike local area networks, while extranet network facilitates to share organizational information in a secure manner toward partners, suppliers, vendors, customers, and consumers with an integration of the internet technologies (Vlosky *et al.*, 2000; Baker, 2000). Besides, extended intranets are usually acknowledged as extranets, which assist in revolutionizing the business operations with new and relevant strategies (Vlosky *et al.*, 2000). Baker (2000) suggested that organizations embraced intranets owing to obtain measurable advantages to enhance the communications within minimum cost while extranets might be embraced to facilitate transactions (e.g. the selling and purchasing), information sharing, and assist online services using unlike portals to define a particular marketplace. In the domain of marketing, intranet and extranet are affordable tools that facilitate to achieve a higher ROI and bring together suppliers, customers, and partners into one information loop (Baker, 2000; Krishnan and Ramaswamy, 1998).

An evaluation of the intranet and extranet tools has been examined by academic experts in diverse dimensions few decades ago (Bickerton *et al.*, 1998; Vlosky *et al.*, 2000; Windrum and Berranger, 2003; Damsgaard and Scheepers, 2000). In marketing practices, the study on such emerging tools is remarkably growing and still, there is lack of extensive literature on intranet and extranet, especially empirical evidence concerning to marketing and from B2C. El-Gohary (2012) has studied IMA and EM as sub-dimensions of eM and established a positive association of such marketing channels on tourism organizations in Egypt. El-Gohary (2012) has recommended that further studies might be expanded to record more empirical evidences regarding IMA and EM. Baker (2000) stated that new strategies concerning to the IMA and EM can make future of the organizations. However, Baker (2000) argued that firms seed own destruction if not develop internet-based strategies in the present era. Therefore, this study endeavors to investigate the relationship of IMA and EM for empirical contribution in respective literature. The following hypothesis is proposed in relationship that such flourishing marketing methods can perform an effective role in marketing communications:

*H5.* IMA is positively correlated to EBBT.

*H6.* EM is positively correlated to EBBT.

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2.1.6 *MV*. Moderating effect supports to determine the strength of the relationships between two variables (Hayes and Preacher, 2014; Garcia *et al.*, 2015). In marketing perspective and related to ICT, mostly studies used gender as a moderator, e.g., Hew *et al.* (2015), Faqih and Jaradat (2015), Wong *et al.* (2014), and Nysveen *et al.* (2005). Venkatesh and Davis (2000) stated that women and men have a different approach to take a decision concerning to the adoption of technologies. The decision of male and female is unlike and consequently gender is a factor that sometimes influences during the acceptance process of new technologies (Venkatesh and Davis, 2000; Yang, 2005; Wong *et al.*, 2014). According to Yang (2005) and Otnes and McGrath (2001), male shows more favorable attitude toward information technology relatively than female. Faqih and Jaradat (2015) examined the moderator role of gender between individual level and adoption of mobile commerce. A study of Hew *et al.* (2015) is related to ICT and has used gender as a moderator. The current intend is to explore the role of gender whether gender affects all the relationships of eM and EBBT. Hence, apart from above literature-based evidence, the following relationship is hypothesized to ensure the moderating effect between eM and EBBT:

*H7*. Gender moderates all the relationships among eM and EBBT.

### 3. Research design and methods

#### 3.1 Data collection and sample size

In this section, the development of the questionnaire along with a pilot plan and sampling techniques is expressed. First, this study is quantitative in nature and quantitative paradigm aids to measure a precise, reliable, accurate, and generalized prediction involved on assumed relationships (Cassell and Symon, 1994). However, primary data were collected through the development of questionnaires, which included two core parts such as demographic information that based on eight attributes (see Table I). The second part was based on core inquiries of the relationships among the eM model and consumers' buying tendencies comprised of 44 statements.

Primary data were collected through questionnaire distribution among 1,600 consumers (students) of different universities from February 2016 to August 2016 in North China. The northern region of China was focused owing to some important motives. First, the sample of this study based on students employed from North China where such area has an excellent potential to produce a large number of students due to the availability of numerous universities (Bai, 2006). The northern part of China contributes a vital role in the economy of China (Xia *et al.*, 2007). It is one of the major administrative regions and cover nearly 1.5 million square kilometers (Xia *et al.*, 2007). There are several top ranking universities which are located in North China, specifically in Beijing that is capital, major municipality, and economically well-developed region (Bai, 2006). Most students wish and prefer to study in Beijing and surrounding areas since several well-recognized universities reside in such regions (Xia *et al.*, 2007). Second, in marketing and consumers' perspective, the relationship of such evolving technologies and consumers' buying behavior is still on initial stage and not widely been explored, while several experts have recommended more work on emerging and internet-based technologies to validate the findings in the world (e.g., Coviello *et al.*, 2001; El-Gohary, 2012; Mathews *et al.*, 2016; Schooley *et al.*, 2016). Therefore, this study probes the linkage between eM and EBBT along with moderating influence of the gender to contribute to the respective literature with empirical evidence from North China. Additionally, there are few more considerations related to time and budget that limited the study to North China.

Besides, 1,425 surveys were successfully returned and subsequently 1,350 were drawn entirely accurate and considered for further analysis after removing incomplete and erroneous surveys. It revealed 84 percent accuracy in the response rate. The surveys were

randomly distributed to all level of students in the universities. The students were focused owing to several important reasons. First, nearly every student at university level owns m-devices and frequently uses internet using m-devices and remainder electronics devices (see Table I). Since the intention of our survey is to examine the relationship among emerging technologies and it is observed that students are highly attached to such tools and often adopt technologies earlier than rest of the individuals (Schuster *et al.*, 2016; Persaud and Azhar, 2012). The researchers have been stated that the selection of student's samples for data collection usually seems more appropriate (Sternthal *et al.*, 1987). Compeau *et al.* (2012) have analyzed the studies from the period 1990-2010 and reported if any study uses a sample of students then generalizable statements about findings could be formed. Compeau *et al.* (2012) highlighted that students have been extensively used by several experts for more than 20 years in IS studies. Similarly, the study of Hew *et al.* (2015) used the sample of students for empirical evaluation regarding mobile Apps and implications. According to Compeau *et al.* (2012), students are more open to adopting ICT, consequently data collection from such respondents could be used to represent the target population. Moreover, students arrive in the universities from different geographical regions having distinct social values, religions, cultures, races, and backgrounds (Hew *et al.*, 2015). The student sample could be used as a representation of the target population (Leong *et al.*, 2013). With an intention to this, it is reasonable and justifiable to assume student sample for representation of target populations.

The data were collected from some major provinces and cities of Northern China, including Beijing, Shijiazhuang, Henan, Shandong, Hebei, Shanxi, and Tianjin through personal visits to the universities, online distribution of surveys using "Google doc," and group e-mails to colleagues and friends studying in such regions. Simple ball pens were also presented to a number of respondents for their motivations. All the questionnaire items were piloted with small sample size and after that culturally modified to ensure the validity.

Van *et al.* (2001) suggested that a pilot study supports to realize the feasibility of desired instruments. Therefore, the questionnaire items were pre-tested with the small sample size of 50 students randomly selected from two universities of China, located in Beijing province. Cronbach's  $\alpha$  values were acquired to understand the construct reliability, and such testing method inspired from Sung and Choi (2009). The overall findings revealed Cronbach's  $\alpha$ s for independent variables (IV) such as eM at  $\alpha = 0.81$ , MM at  $\alpha = 0.83$ , EMa at  $\alpha = 0.80$ , internet marketing (IM) at  $\alpha = 0.82$ , IMa at  $\alpha = 0.79$ , and EM at  $\alpha = 0.78$ . However, overall reliability for dependent variables (DV) is  $\alpha = 0.80$ . The results affirm the reliability of each construct of the IV and DV, which is greater than 0.7 recommended criteria (Nunnally, 1978). In contrast, JAVA variable of the MM has weak reliability ( $\alpha = 0.30$ ) during the pre-testing process. Therefore, authors eliminated such variable in further data collection with large sample size (see Table I). The following scales and measures were finally acquired in the next step of data collection.

### 3.2 Measures of the constructs (IV and DV)

Three types of variables were employed, i.e., IV, DV, and moderating variable (MV). eM adopted as the IV, EBBT as the DV, and gender attribute was employed as a MV. Subsequently, MM, EMa, IM, IMa, and EM were used as the IV and examined the relationship of each variable independently toward EBBT. Likewise, the role of moderator was evaluated among all the relationships of eM and EBBT. In the survey, the five-point Likert scale was used ranged from (1) Strongly Disagree, (2) Disagree, (3) Neutral, (4) Agree, and (5) Strongly Agree such scale was employed in various related studies, i.e., El-Gohary (2012), Baumgartner and Steenkamp (1996), Persaud and Azhar (2012), and Loureiro and Kaufmann (2017). However, ordinal and nominal scales were also employed to access the demographic information of the respondents such as age, gender, marital status, usage of

internet, and level of education. In SPSS, nominal and ordinal scales were coded from digit 1 to 5, respectively. The gender was coded from digit 1 to 2 where male was coded as 1, while female was coded as 2. Regardless, scales were culturally modified to avoid any bias. The following measures were employed to evaluate the relationship among all variables of this study.

First, the measurement items of eM were adopted from El-Gohary (2012) comprised of the five-item model: IM, IMA, EM, MM, and EMa. Second, to conduct a comprehensive examination of each factor of the eM model, first, the measurement items of MM were adopted from Leppaniemi *et al.* (2006) based on three items: SMS, wireless applications protocol, and MMS. Third, the measurements of EMa were adopted from the Sterne and Priore (2000) based on three items: e-newsletters advertising, viral marketing, and e-promotion advertising. Fourth, measurement items of IM were acquired from Bianchi and Mathews (2016) consisted of five items: online advertising, online sales, online after sales service, market research and online procurement. Fifth, the measures of IMA were achieved from Damsgaard and Scheepers (2000) based on four intranet technology modes: publish information using technologies, transact information using World Wide Web, interacting with peoples, and searching information. Finally, the measures of EM were adopted from Vlosky *et al.* (2000) consisted of four items: trust, communication exchange for information sharing, commitment, and shift of power. Likewise, gender as moderator was based on two characteristics: male and female (see Table I).

In contrast, the measurement items of DV were adopted from the study of Baumgartner and Steenkamp (1996) based on 20 items scale: 10 items for EAP, while 10 items for EIS (see Table II). EAP and EIS are the parts of EBBT, whereas EAP is associated with the consumers' sensory stimulation and EIS is related to the consumers' cognitive stimulation (Baumgartner and Steenkamp, 1996).

### 3.3 Data analysis methodologies

SPSS tool with an addition of IBM/AMOS was utilized to test the study hypotheses using structural equation modeling (SEM) and other statistical techniques. Such techniques and procedures are described as follows.

First, an examination of descriptive characteristics empowers the researcher's decision with a comprehensive description of the data (Leech *et al.*, 2005). The demographic information is estimated using SPSS based on eight characteristics, i.e., age, marital status, qualification, gender, information regarding mobile usage, internet usage, and e-mails usage (see Table I).

Second, the discriminate validity was applied to ensure the degree of differentiation among the variables (Thong, 2001). The discriminate validity can be estimated using "square root of average extracted variance (AVEs) and correlation" between two variables (Deng *et al.*, 2014).

	Mean	SD	EBBT	eM	EMa	MM	IM	IMA	EM
EBBT	3.19	0.89	1						
eM	3.42	0.94	0.736*	1					
EMa	3.44	0.88	0.679*	0.532*	1				
MM	3.43	0.92	0.704*	0.438*	0.454*	1			
IM	3.38	0.91	0.628*	0.283**	0.335*	0.294*	1		
IMA	3.40	0.89	0.647*	0.310*	0.290**	0.494*	0.324**	1	
EM	3.35	0.90	0.668**	0.291**	0.422**	0.502**	0.201**	0.371**	1

**Notes:**  $n = 1,350$ . \*\*, \*Correlation is significant at  $p < 0.05$  and  $p < 0.01$  levels (two-tailed), respectively

**Table II.**  
Pearson correlation  
matrix, mean and SD  
values of major  
constructs

Third, the Pearson's correlation was employed to determine the correlation among all variables of eM and EBBT (see Table III). Cohen *et al.* (2013) suggested that such technique facilitates to calculate the relationship among variables. Rumsey (2002) suggested that “*r*” values in Pearson's correlation infer the directions of association. Taylor (1990) suggested that the values of Pearson's correlation are ranged from  $-1$  to  $+1$  in which lower values affirm lower relationships and higher values express moderate or weak relationships, respectively.

	EBBT		EMa-EN	EMa-EP	EMa-VM	MM-SMS	MM-MMS	MM-WAP	IM-1	IM-2
	EAP	EIS								
EAP	1.0									
EIS	0.532	1.0								
EMa-EN	0.230	0.463	1.0							
EMa-EP	0.472	0.304	0.324	1.0						
EMa-VM	0.392	0.503	0.482	0.430	1.0					
MM-SMS	0.412	0.274	0.203	0.301	0.230	1.0				
MM-MMS	0.552	0.430	0.134	0.390	0.332	0.532	1.0			
MM-WAP	0.382	0.342	0.284	0.273	-0.024	0.639	0.432	1.0		
IM-1	0.263	0.183	0.494	0.540	0.320	0.452	0.582	0.532	1.0	
IM-2	0.482	0.394	0.239	0.493	0.203	0.632	0.381	0.436	0.503	1.0
IM-3	0.320	0.311	0.442	0.304	0.356	0.462	0.495	0.653	0.342	0.632
IM-4	-0.003	0.503	0.203	0.232	0.530	0.326	0.520	0.405	0.432	0.482
IMa-1	0.324	0.462	-0.093	-0.102	0.153	0.631	0.352	0.532	0.394	0.630
IMa-2	0.430	0.483	0.432	0.302	0.103	0.344	0.499	0.405	0.103	0.492
IMa-3	0.321	0.394	0.248	0.234	0.231	0.484	0.583	0.532	-0.201	0.304
IMa-4	0.484	0.368	0.304	0.432	-0.103	0.531	0.443	0.245	0.342	0.352
EM-1	0.302	0.294	0.331	0.531	0.342	0.446	0.360	0.295	0.283	0.311
EM-2	0.332	0.340	0.283	0.305	0.400	0.500	-0.024	0.360	0.463	-0.194
EM-3	0.203	0.431	-0.293	0.215	0.381	0.537	0.193	0.360	0.123	0.403
EM-4	0.133	0.360	0.103	0.104	0.384	0.451	0.245	0.432	0.234	0.309
	IM-3	IM-4	IMa-1	IMa-2	IMa-3	IMa-4	EM-1	EM-2	EM-3	EM-4
EAP										
EIS										
EMa-EN										
EMa-EP										
EMa-VM										
MM-SMS										
MM-MMS										
MM-WAP										
IM-1										
IM-2										
IM-3	1.0									
IM-4	0.390	1.0								
IMa-1	0.384	0.304	1.0							
IMa-2	0.290	-0.013	0.462	1.0						
IMa-3	0.430	0.231	0.406	0.304	1.0					
IMa-4	0.350	0.192	0.390	0.299	0.490	1.0				
EM-1	0.290	0.203	0.404	0.330	0.380	0.503	1.0			
EM-2	0.110	0.301	0.483	0.401	-0.201	0.495	0.494	1.0		
EM-3	0.201	0.289	0.404	0.386	0.403	0.333	0.530	0.475	1.0	
EM-4	0.302	0.270	0.391	0.292	0.203	0.450	0.493	0.384	0.380	1.0

**Notes:** EAP, exploratory acquisition of product; EIS, exploratory information seeking; EBBT, exploratory buying behavior tendencies. EAP and EIS are part of EBBT; EMa-EN, EMa-EP, and EMa-VM are items of e-mail marketing; MM-SMS, MM-MMS, and MM-WAP are items of mobile marketing; IM-1, IM-2, IM-3, and IM-4 are items of internet marketing; IMa-1, IMa-2, IMa-3, and IMa-4 are items of intranet marketing; EM-1, EM-2, EM-3, and EM-4 are items of extranet marketing. Correlation is significant at  $p < 0.05$  level

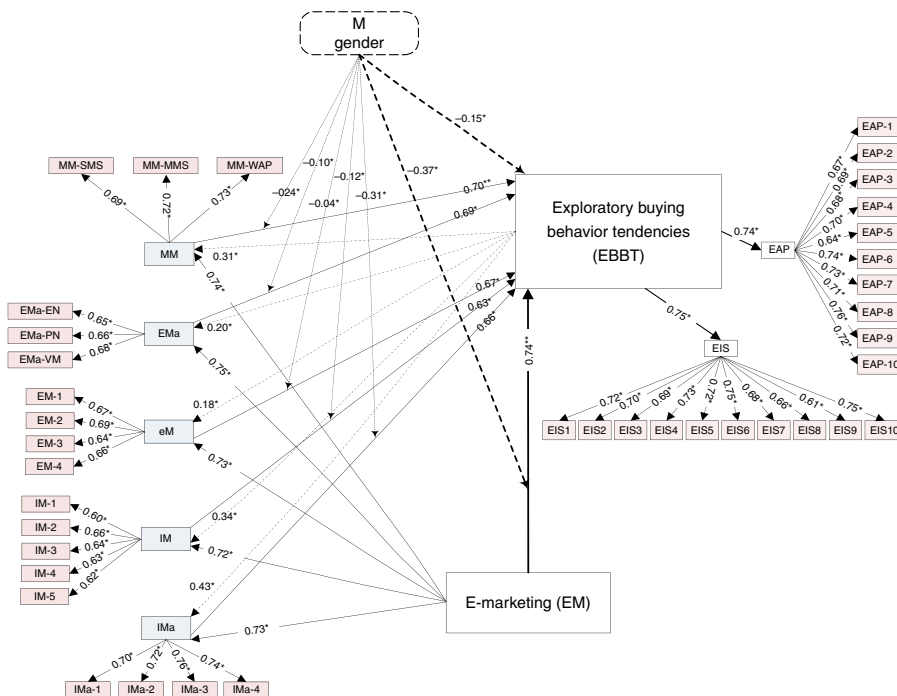
**Table III.** Pearson's correlation analysis among EBBT and e-marketing items

In addition, CFA was adopted to estimate the reliability and convergent validity. In order to determine the internal consistency, a reliability test was applied using composite reliability (CR) and outcome values after such method must be  $> 0.7$ , as suggested by Hair *et al.* (1998). However, convergent validity might be determined using AVEs and factor loadings (FL). The output values of AVEs and FL must be  $> 0.5$  to ensure convergent validity (Fornell and Larcker, 1981; Kline, 2005).

Finally, SEM was adopted that facilitates to estimate the correlation among variables (Kline, 2005). Model fit indices for SEM are examined through the comparative fit index (CFI), goodness of fit index (GFI), adjusted goodness of fit index (AGFI), normalized fit index (NFI), root mean square error of approximation (RMSEA), and  $\chi^2/df$  fit index. The result values for such indices must be appropriate as suggested criteria as addressed in the study of Chang *et al.* (2009), e.g., CFI  $> 0.9$ , GFI  $> 0.9$ , AGFI  $> 0.8$ , NFI  $> 0.9$ , RMSEA  $< 0.08$ , and the value of  $\chi^2/df$  must be  $\leq 3.00$ . A further evaluation has been done using path coefficients for each latent variable to examine the interrelationships within each variable. Similarly, SEM was further applied to ensure the moderating effect of the gender among all the relationships of eM and EBBT (see Figure 2). The SEM analysis technique to treat the moderating influence is inspired from several previous studies, e.g., Burghy *et al.* (2012), Wong *et al.* (2014), and Hew *et al.* (2015).

#### 4. Data analysis and results

Demographic characteristics depend on eight attributes, including age, gender, education, marital status, and year of phones usage (see Table I). In this research, female respondents



**Notes:** MM, mobile marketing; EMa, email marketing; EM, extranet marketing; IM, internet marketing; IMa, intranet marketing; eM, electronic marketing; EBBT, exploratory buying behavior tendencies; M, moderating variable; EAP, exploratory acquisition of product; EIS, exploratory information seeking. EAP and EIS are part of EBBT. \* $p < 0.05$ ; \*\* $p < 0.01$

Figure 2. Structural model

were higher than male respondents. The ages of the respondents are different, where 39 percent male and 38 percent female were 18-23 years old, 30 percent male and 27.2 percent female were 24-28 years old, 18.3 percent male and 19.3 percent female were 29-34 years old, and only 12 percent male and 16 percent female were > 35 years. Similarly, 40.7 percent males and 42 percent female were bachelor-level students in different universities in central North China, while 28.3 percent male and 24 percent female are master students, 17.7 percent male and 21.3 percent female are MPhil-level students, and only 13.3 percent male and 12.7 percent female are PhD candidates. Similarly, the students have different years of education, where 28.3 percent male and 26 percent female have one to two academic years, 45.3 percent male and 40.7 percent female have three to four years, 20 percent male and 23.3 percent female have five to six years, and finally 6.3 percent male and 10 percent female are studying for more than six years. However, only 12.3 percent male and 12.8 percent female were married, while 87.7 percent male and 87.2 percent female were still unmarried. Almost, every student of this survey possessed their mobile phones and used the internet where 89.2 percent male and 81.3 percent female use internet on their cell phone while 10.8 percent male 18.7 percent female use internet on other electronic devices, including tablets, laptops, and other smart devices. In contrast, all remainder description of the respondents is illustrated in following Table I.

#### 4.1 Pearson correlation matrix and values for mean and standard deviation (SD)

Table II reports the overall values for Pearson's correlation which represents the association among variables. Second, the interrelationships among EBBT and eM constructs were comprehensively examined to ensure the in-depth associations of all items (see Table III). All values of correlations are within the range from -1 to +1, as suggested criteria by Taylor (1990). Additionally, the mean values disclose the central tendency, while SD estimates the disperse tendencies of the data (Leech *et al.*, 2005).

#### 4.2 Reliability and validity

As addressed in an earlier section that reliability and convergent validity could be estimated through CR, AVEs, and FL. Thus, all values of CR are > 0.7, AVEs and FL are > 0.5, as a recommended criterion (Fornell and Larcker, 1981; Kline, 2005), as illustrated in Table IV.

#### 4.3 Discriminate validity

The discriminate validity was applied to ensure the degree of differentiation between variables using the square root of AVEs and correlation between two variables. Table V shows that square root of AVEs is exceeding from corresponding inter-correlation of variables. Therefore, the results indicate that discriminate validity has established in such conditions (Deng *et al.*, 2014).

#### 4.4 SEM

The intention to adopt SEM was to estimate the correlation among research constructs. All results for SEM indices are best fitted where GFI = 0.915, AGFI = 0.701, NFI = 0.935, NFI = 0.960, RMSEA = 0.069, and  $\chi^2/df = 2.59$ . All values of GFI, NFI, CFI are > 0.9, AGFI < 0.8, RMSEA < 0.08, and  $\chi^2/df$  is  $\leq 3$ , as suggested criteria addressed in the methodology section. Regardless, paths for each hypothesis are correlated at two levels, i.e.,  $p < 0.05$  and  $p < 0.01$  where eM ( $\beta = 0.74^{**}$ ,  $p < 0.01$ ) for H1, EMa ( $\beta = 0.69^*$ ,  $p < 0.05$ ) for H2, MM ( $\beta = 0.70^{**}$ ,  $p < 0.01$ ) for H3, IM ( $\beta = 0.63^*$ ,  $p < 0.05$ ) for H4, IMa ( $\beta = 0.65^*$ ,  $p < 0.05$ ) for H5, EM ( $\beta = 0.67^*$ ,  $p < 0.05$ ) for H6, and MV ( $\beta = -0.37^*$ ,  $p < 0.05$ ) for H7, respectively. All results paths are significantly correlated except MV that did not affect the relationships among eM and EBBT and found as an insignificant factor (see Table VI).

Achieving  
consumers'  
attention

Labeling	Constructs/items	Factor loading	CR	AVEs
<i>eM</i>	<i>Electronic marketing<sup>a</sup></i>		0.84	0.562
IM	Internet marketing stimulates my exploratory buying behavior	0.70		
IMa	Intranet marketing stimulates my exploratory buying behavior	0.71		
EM	Extranet marketing stimulates my exploratory buying behavior	0.72		
MM	Mobile marketing stimulates my exploratory buying behavior	0.69		
EMa	E-mail marketing stimulates my exploratory buying behavior	0.72		
<i>EMa</i>	<i>E-mail marketing<sup>a</sup></i>		0.82	0.570
EMa-EN	Information being received as e-newsletters often stimulates my buying behavior tendencies	0.71		
EMa-EP	Information being received through different e-promotions often motivates my buying behavior tendencies	0.72		
EMa-VM	Viral marketing stimulates my buying behavior tendencies	0.74		
<i>MM</i>	<i>Mobile marketing<sup>a</sup></i>		0.82	0.570
MM-SMS	SMS marketing motivates my buying behavior tendencies	0.70		
MM-MMS	MMS marketing motivates my buying behavior tendencies	0.74		
MM-WAP	WAP marketing motivates my buying behavior tendencies	0.72		
<i>IM</i>	<i>Internet marketing<sup>a</sup></i>		0.80	0.601
IM-1	Online advertising motivates my buying tendencies	0.71		
IM-2	Internet selling stimulates my buying tendencies	0.73		
IM-3	Internet marketing facilitates my post-purchase tendencies	0.70		
IM-4	Internet marketing facilitates my buying tendencies to search other market products	0.72		
IM-5	Internet marketing supports my procurement-related tendencies	0.72		
<i>IMa</i>	<i>Intranet marketing<sup>a</sup></i>		0.82	0.592
IMa-1	Information as published through intranet marketing stimulates my buying tendencies	0.76		
IMa-2	Information using WWW assists me to transact information	0.73		
IMa-3	Intranet marketing motivates to interact with other peoples for information sharing	0.74		
IMa-4	Intranet marketing assists my behavior during search of product information	0.72		
<i>EM</i>	<i>Extranet marketing<sup>a</sup></i>		0.79	0.563
EM-1	I think, extranet marketing is trust worthy that assist my buying tendencies	0.69		
EM-2	I think, extranet marketing assist me to exchange and share information to others and reinforce my buying tendencies	0.70		
EM-3	Extranet marketing aid to retain my commitment to further search product information	0.71		
EM-4	Extranet marketing give me the power to achieve product information freely	0.68		
<i>EAP</i>	<i>Exploratory acquisition of product (EAP)<sup>b</sup></i>		0.84	0.592
EAP-1	I usually tend to buy the same product even a number of product variety is available	0.73		
EAP-2	I often stick on a product which I frequently buy than the product I am not sure about	0.72		
EAP-3	I think I am brand loyal individual about my product	0.70		
EAP-4	My intention not always to give try a new product in market	0.75		
EAP-5	I feel comfort about the product which I know well and often feel myself safe to make buying decision	0.74		
EAP-6	I think, if I like any product then it not easy for me to switch another product	0.70		
EAP-7	I feel myself cautions to try new or a different product	0.71		
EAP-8	My decision often fluctuate to buy unfamiliar products	0.76		
EAP-9	I would not prefer a product which I am not sure about its quality	0.73		

(continued)

**Table IV.**  
Reliability and  
convergent validity



BJM

Labeling	Constructs/items	Factor loading	CR	AVEs
EAP-10	I usually buy products on regular basis	0.75	0.85	0.599
EIS	Exploratory information seeking (EIS) <sup>b</sup>			
EIS-1	I think its waste of time to read advertising material	0.74		
EIS-2	I often motivated to go for window shopping	0.73		
EIS-3	I think, it is boring to listen about the products from others	0.72		
EIS-4	I generally access information of my product through different possible ways	0.75		
EIS-5	I think I do not prefer to buy a product because of curiosity	0.71		
EIS-6	I look around to get information about any products even I have no plan to buy any product	0.73		
EIS-7	I usually ignore the advertising information being received from any sauces	0.70		
EIS-8	Product display using any means attracts me to shop such products	0.72		
EIS-9	I will not prefer to share my purchase with my friends	0.71		
EIS-10	I usually read advertising just for the sake of curiosity	0.74		

**Notes:** CR, composite reliability; AVEs, average extracted variance. EAP and EIS are two parts of exploratory buying behavior tendencies (EBBT). <sup>a</sup>Independent variables (IV); <sup>b</sup>dependent variables (DV)

Table IV.

	EBBT	eM	EMa	MM	IM	IMa	EM
EBBT	0.831*						
eM	0.632	0.720*					
EMa	0.671	0.520	0.822*				
MM	0.590	0.682	0.563	0.798*			
IM	0.603	0.501	0.603	0.478	0.810*		
IMa	0.677	0.631	0.492	0.522	0.423	0.841*	
EM	0.563	0.658	0.306	0.431	0.492	0.561	0.724*

Table V.

Test of discriminate validity

**Notes:** EBBT, exploratory buying behavior tendencies; eM, electronic marketing; EMa, e-mail marketing; MM, mobile marketing; IM, internet marketing; IMa, intranet marketing; EM, extranet marketing. \*Square root of AVE of each constructs

#### 4.5 Standardized/path coefficients

Figure 2 presents a comprehensive summary concerning to standardized coefficients of each factor of the study to ensure interrelationships. First, eM determined through five dimensions, and results show the interrelationship of each variable on distinct levels such as MM at  $\beta = 0.74^*$ , EMa at  $\beta = 0.75^*$ , EM at  $\beta = 0.73^*$ , IM at  $\beta = 0.72^*$ , and IMa at  $\beta = 0.73^*$ . Second, the correlation of each sub-element of the eM was further established autonomously toward EBBT. To this end, the correlation of MM evaluated and sub-items of the MM are positively associated, i.e., MM-SMS at  $\beta = 0.69^*$ , MM-MMS at  $\beta = 0.72^*$ , and MM-WAP at  $\beta = 0.73^*$ . The relationship of EMa examined with three sub-items, and each metric has positive association, i.e., EMa-EN ( $\beta = 0.65^*$ ), EMa-EP ( $\beta = 0.66^*$ ), and EMa-VM ( $\beta = 0.68^*$ ). The IM uses five elements such as IM-1 at  $\beta = 0.60^*$ , IM-2 at  $\beta = 0.66^*$ , IM-3 at  $\beta = 0.64^*$ , IM-4 at  $\beta = 0.63^*$ , and IM-5 at  $\beta = 0.62^*$ . Finally, an inter-correlation of IMa and EM evaluated to examine the autonomous relationships. The both constructs are positively correlated along with sub-dimensions such as IMa with four items: IMa-1 at  $\beta = 0.70^*$ , IMa-2 at  $\beta = 0.72^*$ , IMa-3 at  $\beta = 0.76^*$ , and IMa-4 at  $\beta = 0.74^*$ , while EM with four sub-items: EM-1 at  $\beta = 0.67^*$ , EM-2 at  $\beta = 0.69^*$ , EM-3 at  $\beta = 0.64^*$ , and EM-4 at  $\beta = 0.66^*$ , respectively.

On the other side, EBBT adopted as DV and determined using two parts: EAP and EIS. EAP part is evaluated through ten items where each item is significantly correlated such as

Proposed paths	Expected sign	Total effects	Direct effects	Hypothesis testing
<i>H1</i> : e-marketing is positively correlated to exploratory buying behavior tendencies	+	0.74**	0.74**	Supported
<i>H2</i> : e-mail marketing is positively correlated to exploratory buying behavior tendencies	+	0.69*	0.69*	Supported
<i>H3</i> : mobile marketing is positively correlated to exploratory buying behavior tendencies	+	0.70**	0.70**	Supported
<i>H4</i> : internet marketing is positively correlated to exploratory buying behavior tendencies	+	0.63*	0.63*	Supported
<i>H5</i> : intranet marketing is positively correlated to exploratory buying behavior tendencies	+	0.65*	0.65*	Supported
<i>H6</i> : extranet marketing is positively correlated to exploratory buying behavior tendencies	+	0.67*	0.67*	Supported
<i>H7</i> : gender moderates all the relationships among e-marketing and exploratory buying behavior tendencies	±	-0.37*	-0.37*	Unsupported
<i>Current SEM fit indices</i>				
Goodness of fit indices		0.915		
Adjusted goodness of fit indices		0.701		
Comparative fit indices		0.960		
Normalized fit indices		0.935		
Root mean square error approximation		0.069		
$\chi^2/df$		2.59		
<b>Notes:</b> *,**Significant at $p < 0.05$ and $p < 0.01$ , levels respectively				

**Table VI.**  
Summary of  
major relationship  
using SEM

EAP-1 at  $\beta = 0.67^*$ , EAP-2 at  $\beta = 0.69^*$ , EAP-3 at  $\beta = 0.68^*$ , EAP-4 at  $\beta = 0.70^*$ , EAP-5 at  $\beta = 0.64^*$ , EAP-6 at  $\beta = 0.74^*$ , EAP-7 at  $\beta = 0.73^*$ , EAP-8 at  $\beta = 0.71^*$ , EAP-9 at  $\beta = 0.76^*$ , and EAP-10 at  $\beta = 0.72^*$ . However, EIS part determined through ten items and each item has significant relationships such as EIS-1 at  $\beta = 0.72^*$ , EIS-2 at  $\beta = 0.70^*$ , EIS-3 at  $\beta = 0.69^*$ , EIS-4 at  $\beta = 0.73^*$ , EIS-5 at  $\beta = 0.72^*$ , EIS-6 at  $\beta = 0.75^*$ , EIS-7 at  $\beta = 0.68^*$ , EIS-8 at  $\beta = 0.66^*$ , EIS-9 at  $\beta = 0.61^*$ , and EIS-10 at  $\beta = 0.75^*$ .

Gender adopted as a moderator and relationships were comprehensively evaluated to ensure the moderating effect between eM and EBBT. First, the results revealed an overall moderating relationship between eM and EBBT at  $\beta = -0.37^*$  which is non-significant. Thereafter, moderating relationships of each dimension of MM to EBBT were independently examined and results affirmed insignificant relationships such as between MM and EBBT at  $\beta = -0.24^*$ , EMa and EBBT at  $\beta = -0.10^*$ , EM and EBBT at  $\beta = -0.04^*$ , IM and EBBT at  $\beta = -0.12^*$ , and finally IMA and EBBT at  $\beta = -0.31^*$ . The relationships of gender to EBBT are also insignificant such as MV and EBBT at  $\beta = -0.15^*$ .

Additionally, the effect of EBBT toward eM along with sub-factors of the eM model was examined. The results indicated the positive effect such as EBBT to MM at  $\beta = 0.31^*$ , EBBT to EMa at  $\beta = 0.29^*$ , EBBT to EM at  $\beta = 0.18^*$ , EBBT to IM at  $\beta = 0.34^*$ , and likewise the impact of EBBT and IMA at  $\beta = 0.43^*$ , respectively. The findings affirmed the positive relationships of EBBT toward all eM factors but relatively less positive effect than the direct effect of eM factors to EBBT (see Figure 2).

## 5. Discussion and implications

SEM statistical techniques were mainly employed to evaluate the relationships of proposed hypotheses. We fashioned seven hypotheses to meet the research objectives as summarized in Table VI and described as follows.

It was proposed in *H1* that eM is positively correlated to EBBT. The result outcomes after SEM affirmed a significant positive association between eM and EBBT at  $\beta = 0.74^{**}$ . However, an inter-correlation of each sub-factor of eM has positive association such as MM at  $\beta = 0.70^{**}$ , EMa at  $\beta = 0.69^*$ , IM ( $\beta = 0.63^*$ ), EM ( $\beta = 0.67^*$ ), and IMa is correlated at  $\beta = 0.65^*$ , respectively. Therefore, *H1* is supported, and revealed that eM is positively correlated to EBBT.

Second, it was proposed in *H2* that EMa is positively correlated to EBBT. The results revealed a significant association between EMa and EBBT at  $\beta = 0.69^*$ . The inter-correlation of each sub-factor of the MM indicates the positive relationships such as EMa-EN at  $\beta = 0.65^*$ , EMa-PN at  $\beta = 0.66^*$ , and EMa-VM at  $\beta = 0.68^*$ , respectively. The findings are toward expected directions; therefore, *H2* is supported, which affirmed a positive influence of EMa on EBBT.

Third, it was assumed in *H3* that MM is positively correlated to EBBT. The results established a significant connection between MM and EBBT at  $\beta = 0.70^{**}$ . Additionally, the inter-correlation of three sub-factor of the MM has a positive connection where MM-SMS at  $\beta = 0.69^*$ , MM-MMS at  $\beta = 0.72^*$ , and MM-WAP is correlated at  $\beta = 0.73^*$ , respectively. Hence, the findings infer the relationship toward expected directions. Thus, *H3* is supported that confirmed MM is significantly associated with EBBT.

It was proposed in *H4* that IM is positively correlated to EBBT. The results indicated a significant connection between IM and EBBT at  $\beta = 0.63^*$ . Likewise, the inter-correlation of sub-factors affirmed positive relationships such as IM-1 at  $\beta = 0.60^*$ , IM-2 at  $\beta = 0.66^*$ , IM-3 at  $\beta = 0.64^*$ , IM-4 at  $\beta = 0.63^*$ , and IM-5 at  $\beta = 0.62^*$ , respectively. Hence, findings assert the relationship toward expected side. Therefore, *H4* is supported, which confirmed the significant effect of IM on EBBT.

It was proposed in *H5* that IMa is positively correlated to EBBT. The results revealed a significant association between IMa and EBBT at  $\beta = 0.65^*$ . The inter-correlation of each factor is positively correlated such as IMa-1 at  $\beta = 0.70^*$ , IMa-2 at  $\beta = 0.72^*$ , IMa-3 at  $\beta = 0.76^*$ , and IMa-4 at  $\beta = 0.74^*$ , respectively. Result values are showing outcome toward expectations, consequently *H5* is supported.

Likewise, it was proposed in *H6* that EM is positively correlated with EBBT. The findings revealed a significant connection between EM and EBBT at  $\beta = 0.67^*$ . The inter-correlation of sub-factor has positive associations such as EM-1 at  $\beta = 0.67^*$ , EM-2 at  $\beta = 0.69^*$ , EM-3 at  $\beta = 0.64^*$ , and EM-4 at  $\beta = 0.66^*$ , respectively. Hence, the findings of each dimension infer the relationships toward an expected direction. Thus, *H6* is supported based on such outcomes, which established a positive relationship between EM and EBBT.

*H7* is concerning to MV that gender moderates all the relationships among eM factors and EBBT. First, the findings affirmed an insignificant effect of gender between a relationship of eM and EBBT at  $\beta = -0.37^*$ . The interrelationships further assured the non-significant impact of the gender to all relationships, i.e., MM and EBBT at  $\beta = -0.24^*$ , EMa and EBBT at  $\beta = -0.29^*$ , EM and EBBT at  $\beta = -0.04^*$ , IM and EBBT at  $\beta = -0.12^*$ , and IMa and EBBT at  $\beta = -0.31^*$ . The findings revealed insignificant relationships of moderator among eM factors and EBBT. Therefore, *H7* is unsupported.

Despite several models related to IS were proposed and tested by several academic experts and practitioners decades ago within unlike perspectives and dimensions across the globe (e.g., Rondan-Cataluña *et al.*, 2015; Kalyanam and McIntyre, 2002; Sigala, 2002; Gilmore *et al.*, 2007; Taylor and Stratton, 2010; Krishnamurthy and Singh, 2005; Hew *et al.*, 2015). The majority of scholars were intended to examine the role of technologies in business operations and most of the investigations were concerned to evaluate the consequences in two important streams, i.e., acceptance and usage of technologies from 1970s to date through distinct models such as technology acceptance model (TAM/TAMI/TAM2/TAM3), unified theory of acceptance and use of technology (UTAUT/UTAUT2), theory of reasoned

action model, theory of planned behavior, and innovation diffusion theory (IDT) (Venkatesh *et al.*, 2012; Rondan-Cataluña *et al.*, 2015; Hew *et al.*, 2015). Additionally, in marketing practices, most studies have been evaluated the role of eM as a part of interactive technologies since Coviello *et al.* (2001) incorporated eM as a fifth important element of contemporary marketing practices. Subsequently, El-Gohary (2012) studied eM and presented a model of eM based on five core dimensions, i.e., IM, IMa, EM, MM, and EMa; and such model was extended and validated from previous two IS models, i.e., TAM and IDT. El-Gohary (2012) tested eM from a B2B perspective and confirmed overall relationships by considering those five determinants as the metrics of eM within Egyptian firms. However, our study extends the eM model of El-Gohary (2012) with comprehensive and in-depth analysis of each dimension autonomously toward EBBT, i.e., IM and EBBT, IMa and EBBT, EM and EBBT, MM and EBBT, and EMa and EBBT together with an overall relationship of eM toward EBBT, respectively. Additionally, this study examined the effect of gender as moderator to ensure the strength of the relationships between eM and EBBT. Besides, this study is concerned to examine relationships from a B2C and all such examinations distinct this study because of the comprehensive applications of the eM model to EBBT.

### 5.1 Managerial implications

Managers are under enormous pressure to uncover the factors driving consumers' behavior in the current digital age. Undeniably, it has become summit priority for strategic management to realize how to win over the consumer in today's competitive environment. In this context, an advertisement contributes a prime role to reach a particular target market (Mortimer, 2008). The favorable attitude of the consumers toward a particular advertising campaign indicates a positive outcome of such advertising tool in marketing communications (Loureiro and Kaufmann, 2017; Smutkupt *et al.*, 2010). To develop an effective and creative advertising strategy is imperative, which must undergo a process to comprehend the prevailed drift among consumers prior to broadcast any information (Loureiro and Kaufmann, 2017; Persaud and Azhar, 2012). In the present market scenario, the consumers have become smarter (Thaler and Tucker, 2013). Therefore, smart techniques may adequately facilitate, satisfy, and reinforce their buying behavior. According to Gubbi *et al.* (2013), the internet acknowledged as a key driver of information technology and experts are endeavoring to create the internet-based network for everything, where such concept is recognized internet of things. This study contributes to the respective literature by reporting following interesting findings and implications for marketers.

In the managerial standpoint, this study proposes several implications to exploit the utmost potential of such emerging technologies in marketing practices. The advertisers might realize the potentials of eM, MM, EMa, IMa, EM, and IM together with pros and cons of each promotional activity prior to transmitting the information. Advertisement using such marketing methods must consist of eye-catching material, able to create pleasure for viewers, and must be emotionally sound. It is found that there are significant relationships between eM and EBBT but the effect of the gender as a moderator discovered an insignificant among the relationships of eM and EBBT. It affirmed that such relationships of eM and EBBT are significantly applicable to both gender. Our results concerning to moderator are consistent with previous related studies of IS and ICT, e.g., Faqih and Jaradat (2015), Wong *et al.* (2014), and Hew *et al.* (2015). Besides, the remainder practical implications for marketing practitioners are suggested as follows:

- (1) eM is a flourishing advertising tactic that can be a replacement of conventional advertising methods. The promotion of a product using eM can contribute a dynamic role in marketing communications to reinforce consumers' buying behavior tendencies. The marketers are encouraged to consider diverse observations while

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implementing eM campaigns. For instant, proper segmentation of market is needed to consider along with other demographic and social characteristics of a target market. Understanding the brand equity, highly engagement moments, perceived value, social classes, existing trends, and rest of behavioral attributes concerning to consumers must be analyzed before transmitting information using such emerging technologies. In contrast, our study is consistent with the conclusions of previous studies, i.e., Coviello *et al.* (2001), Barwise and Farley (2005), Gilmore *et al.* (2007), Brodie *et al.* (2007), and El-Gohary (2012) where such experts have stated that eM is coming to age and has become a vital tool of promotional activities bearing positive consequences.

- (2) MM reports interesting implications for marketers to accept such an innovative tool of advertising. Marketing communication through m-devices could perform a significant role where such a huge market is mobile user. The marketers are suggested for few considerations during mobile advertising. For example, the selection of contents, i.e., audio, video, text, image, graphics, and rest of short clips has an immense importance to strengthen buying tendencies using diverse features of m-devices, e.g., SMS, MMS, mobile apps, Bluetooth, and WAP. Additionally, it is critical to avoid access of information sharing and without permission of particular receivers. Although experts have claimed that to send access of information and without permission often cause consumers' irritation (Schooley *et al.*, 2016). A message must be permission-based and full of useful information. The current findings are consistent with the findings of previous researchers who suggested that MM is an innovative medium that may assist to reach target market anytime, anywhere, and in a widespread manner (e.g., Schooley *et al.*, 2016; Persaud and Azhar, 2012; Barwise and Strong, 2002; Smutkupt *et al.*, 2010; Leppaniemi *et al.*, 2006; Jensen and Jepsen, 2008; Lee *et al.*, 2017).
- (3) The marketers are encouraged to aware about the significance of EMA to approach and reinforce EBBT. Our findings affirmed that EMA can perform a productive role in advertising with possible supporting features, i.e., e-newsletter, e-promotions, and viral marketing. However, the marketers are advised to avoid sending e-mails repeatedly and without the consent of recipients because such attitude may direct consumer's intention to deem it spam information (Windham and Orton, 2000). An e-mail must be permission based to achieve a higher satisfaction of target market and to protect from such issues. In addition, our findings are consistent with prior studies where experts have described that EMA has a potential in marketing communications to seize utmost concentration of the consumers (Sterne and Priore, 2000; Pavlov *et al.*, 2008; Chittenden and Rettie, 2003; Windham and Orton, 2000).
- (4) IM often recognized as distinct alternatives names, i.e., online marketing, web advertising, internet advertising, and has acknowledged as an excellent component of network technologies (Mathews *et al.*, 2016). The findings established a positive relationship with IM and EBBT. The advertisers are encouraged to consider IM where such method may support to broadcast the messages in a wide manner using unlike means of network technologies such as internet-based ads, web banners, social sites, pre-rolls, digital ads, video ads, display ads, and social media ads. The marketers may approach the audience using supporting features of IM, i.e., video conference, voice mails, IRC, and MUDS technologies. It is a strategic decision to analyze and adopt a particular channel of IM within available resources to prompt EBBT of the target audience. The findings of this study are consistent with some prior studies that have been affirmed IM as a key component of marketing in today's competitive situation (Ismail *et al.*, 2017; Coviello *et al.*, 2001; Bianchi and Mathews, 2016; Stewart and Zhao, 2000).

- (5) Finally, this study has revealed a positive relationship of IMA and EM to EBBT where such tools often consider as interrelated concepts (Vlosky *et al.*, 2000; Baker, 2000). Our understanding regarding IMA and EM explicitly ensured the significance of both channels in marketing communications and furnish insights for marketers. The marketers may employ intranet and extranet techniques to encourage consumers' buying behavior. An extensive assessment of intranet and extranet tools has been reported by numerous scholars in various dimensions decades ago, i.e., Bickerton *et al.* (1998), Vlosky *et al.* (2000), Damsgaard and Scheepers (2000), Windrum and Berranger (2003), and El-Gohary (2012). This study has revealed that IMA and EM have less positive relationships on EBBT relatively than other promotional methods, i.e., MM, IM, and EMa. A further comparison indicated that EM has a higher positive association relatively than IMA. IMA may not be prioritized in consideration because of the least positive relationship to EBBT.

### 5.2 Limitations and future directions

The study has limitations that might be acknowledged in future directions. First, the sample size is limited to 1,350 consumers within Northern region of the People Republic of China, which thus limits its generalizability. Second, applications of the current study are limited to a B2C perspective. Third, data were obtained from university students which further need to be generalized with data collection from different respondents within China and other nations. Fourth, this study examined the effect of a single factor (gender) toward the EBBT where a study might be conducted to explore the influence of internal and external factors to validate the findings toward other nations in future. In précised manner, replicating further empirical work toward remainder areas along with different sample size and regions may assist to validate the findings of such innovative and thriving technologies in future.

This study proposes several research directions for academics and practitioners. While the study is limited to northern central regions of the China, consequently a longitudinal study might be expanded to examine the nexus of such flourishing technologies toward multiple regions, locally and globally together with a large number of sample sizes. A future research might be conducted to evaluate the relationship from B2B and B2G perspectives to furnish additional shreds of evidence across the globe.

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