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Understanding the effect of smart retail brand – Consumer communications via mobile instant messaging (MIM) – An empirical study in the Chinese context

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Abstract

Faced with competitive forces, retailers are innovating by adopting 'smart' technologies such as contactless, omni-channel, ubiquitous computing, social networking and mobile apps. This paper examines consumer behavior responses during the use of a mobile instant messaging (MIM) application channel adopted by a Chinese pure-play retailer. MIM is text-based, real-time, mobile computer-mediated communication technology accomplishing real-time interaction with other users regardless of location. WeChat, a full service MIM application, contains functional and social features including SMS, MMS, LBS, photo sharing, voice message, video calls and "Moments" sharing, which is its social propagating feature. There is a paucity of literature on the role of MIM in building relationships and especially, the relevance of emotion and WOM for consumers engaging in MIM human-computer interactions. The model tested was derived from prior research on trust and also Stimuli-Organism-Response (SOR) that depicts the effects of environmental/informational stimuli on consumers' responses. Specific research objectives included investigating the prediction that environmental stimuli comprising socialness perception, media richness, and involvement induce a positive emotional state, which results in positive WOM. The study employed a quantitative approach using a questionnaire posted on a WeChat (MIM) channel. The sample comprised Chinese WeChat users, typically young consumers (n=486). SEM was used to analyze the data. Prior research has indicated that building relationships with consumers is more difficult when the relationships are consumer-computer as compared to consumer-person (face-to-face). The findings of this study suggest that such a negative effect can be alleviated by the use of MIM, which is associated with socialness perception, media richness, consumer involvement, emotional connections and positive WOM. To the authors' knowledge, this study is original in integrating socialness perception, media richness and WOM into the SOR framework. The implications for practitioners are discussed, relating in particular to retailers' need to be aware of the extent to which consumers are willing to engage with MIM applications.

Key Words

Mobile Instant Messaging (MIM), Socialness Perception, Involvement, Media Richness, Word-of-Mouth (WOM), WeChat.

Paper Type

Research paper

1. Introduction

'Smart retailing' refers to consumers' interactions with innovative technologies that aim to improve the shopping experience. Smart retailing is facilitating consumer access to products, services and crucially, information (Pantano and Priporas, 2016; Pantano and Timmermans, 2014), particularly in fashion clothing retailing (Blázquez, 2014). As the capabilities of smartphones develop to approach those of computers (Calvo-Porrá and Levy-Mangin, 2015) so the experiential benefits of shopping by mobile phone are being enhanced (Pantano and Priporas, 2016). Smart retail mobile commerce channels have grown significantly in recent years. Forrester Research (2014) predicted that 50% of online traffic would be via mobile devices by 2015. Deloitte (2012) predicted that \$31 billion worth of retail sales would be conducted over mobile channels by 2016. IMRG (2014) also predicted a significant growth in mobile sales in China with a market prediction of 7300 RMB by 2018. The mobile market growth in China is outstripping the retail market, with growth of 48% in 2015 (IMRG, 2016). Researchers have hitherto paid little attention to Chinese mobile smart retail channels. The extent to which retailers can communicate effectively with mobile consumers using new smart channels is an emerging research area that this paper explores.

This study focusses on researching the most popular social media channel in China, the mobile Wechat MIM channel that has grown rapidly since 2011 reaching 762 million active monthly users in 2015 (Tencent, 2016a). Chinese internet service providers have introduced mobile instant messaging, games and mobile shopping features to take advantage of this growing market (Zhou, 2011). Understanding the psychology of consumers using mobile smart technologies and their needs is of key strategic benefit to all retailers wishing to expand their Chinese market. Studies have examined the relationship between MIM usage and loyalty (Kim et al., 2015). A growing stream of research is seeking to examine social media contexts including Instant Messaging (Alhabash, Chiang, and Huang, 2014, Han, Min & Lee, 2015, Gan, 2017). There remains a significant research gap regarding the role MIM plays with regard to positive emotional responses and positive word of mouth for mobile consumers.

WeChat is the most popular Chinese-based MIM application, with a majority of Chinese consumers spending nearly 4 hours a day on the MIM channel WeChat (iResearch, 2014). Fifty-five percent of WeChat users open the app over 10 times every day (Tencent, 2015). WeChat has become a powerful social communication tool with over half the users having more than 300 friends, and 57 percent users use WeChat to find new friends and to connect with old friends (Tencent, 2015). Leading Chinese retailers have adopted the WeChat MIM channel as part of their smart retail strategy and several retailers communicate on a daily basis with consumers using the channel (Deng et al, 2010, CNNIC, 2016). The leading Chinese pure-play fashion retailer, which is ranked 8th in the Chinese mobile shopping market (IMRG, 2016), is an important user. This pure-play fashion retailer has been identified as a lead retailer in the use of the WeChat MIM channel in China (Tencent, 2016a, 2016b).

Social aspects are critical in determining adoption of social media including smart retail channel MIM applications (Gan and Wang, 2015, Li, Chen et al., 2015, Li, Liu, et al., 2015). Studies have identified that gender is a critical moderating variable influencing adoption of social media for interpersonal communications; female respondents prefer to use social media with social interaction aspects (Kimbrough et al., 2013). Female consumers are thus posited to be lead users of the Wechat MIM channel, particularly in the online fashion sector (CNNIC, 2016). Fashion products are the most frequently purchased online items by Chinese consumers, with 6 million Chinese consumers buying clothing online in 2014 (IMRG, 2014). The analysis of fashion consumer MIM behavior is an identified human and computer

responses research gap (Kim et al., 2015). Mobile Fashion consumers are innovative users and analysis of their lifestyle consumption activities will provide valuable insights into future Chinese mobile consumer behaviors (Goldsmith et al., 2012, Kim et al., 2015). Research into mobile channels has hitherto focused on technology adoption motivations, experiences, uses and gratification, as consumers began the process of moving towards mobile channels (Pantano and Priporas, 2016). Researchers have identified a need to examine emotional and social influence aspects in the MIM setting (Gan, 2017).

Emotional response and experiential research has been increasingly associated with mobile platforms in recent years; for instance, the experiential view of emotional responses to the mobile consumption experience (Li et al., 2012, Pantano and Priporas, 2016), and emotions towards mobile phone usage (Fortunati and Taipale, 2012). Pleasure and arousal are two dimensions acting as vital stimulations for experience-oriented consumers, which leads to outcomes associated with positive mobile shopping responses (Li et al., 2012, Gao, 2015, Gan, 2017). Emotions derived from experiences such as share, usage, and loyalty of goods and services, leading to consumption can induce positive or negative WOM (Kozinets, 2002). Positive emotions have a positive influence on WOM, which stimulates potential customers to action and enhances the relationship when consumers interact with other consumers or the online retailer (Gelb and Johnson, 1995; Jayawardhena and Wright, 2009).

The objective of this research was to examine the effects of an emerging smart retailer-consumer communications technology and to examine Chinese MIM behavior, focusing on the extent to which the channel is perceived to be a social and media rich channel, effectively aiding the replication of human-human interactions by computer-human interactions. Retail channels which replicate social aspects are considered to be at the forefront of smart retail channel development. Accordingly, the study aims to address the following research questions: (1) to what extent is the new MIM channel considered by consumers to exhibit socialness perceptions attributes; (2) to what extent do consumers feel involved and emotionally engaged in their interactions with MIM communications' by pure-play retailers; and (3) to what extent does media richness affect the consumer experience during usage of the retailer smart channel?

To address the research questions an environmental psychology approach (Mehrabian and Russell, 1974) was adopted with a proposed extension of the SOR framework to include socialness perceptions constructs adapted from Wakefield et al (2011) and a media richness construct adapted from Daft and Lengel, (1984). This paper makes a contribution to mobile commerce literature by extending the environmental psychology SOR framework by integrating social perception elements employed in previous TAM/ SOR studies (Wakefield et al., 2011) with media richness theory constructs (Koo and Ju, 2009). Media richness as part of SOR was validated by Koo and Ju's work, (2009) where it was treated as a stimuli construct. Media richness is considered a significant MIM construct given the heuristics required for effective human-,mobile social interaction replications. This paper also proposes an additional extension to SOR, whereby WOM is treated as the response outcome. In the MIM context, WOM has significant effects on behaviours and eWOM messages reach large audiences who share similar interests (Christodoulides, Michaelidou, and Argyriou, 2012). Research examining emotional and cognitive aspects of WOM (Ladhari, 2007, Kim and Niehm, 2009) finds that pleasure and arousal have significant influences on WOM recommendation intention. Hence, an extension of SOR including integration of social aspects, media richness, emotional responses and WOM within the environmental psychology theory is proposed, which extends current mobile commerce theoretical frameworks.

The rest of the paper proceeds as follows. In Section 2, relevant literature is reviewed, after which the research model and hypotheses are developed in Section 3. The research methodology is outlined in Section 4. Section 5 reports the results, which are discussed in Section 6. The conclusion, contributions to theory, managerial implications, limitations and recommendations for future research are addressed in Section 7.

2. Literature Review

2.1 Environmental Psychology Theory

Mehrabian and Russell (1974) first used environmental psychology theory, to analyse consumers' responses to various retail stimuli that activated emotional reactions affecting consumers' behavioral responses. Environmental psychology theory posits that retailers manipulate store stimuli within their store environments to create emotional responses (Vieira, 2013). Consumers' emotional reactions to an environment are considered to be organism responses (Mehrabian and Russell, 1974). The theory identifies the influence of environmental cues on consumers' internal states, resulting in approach and avoidance behaviors (Mehrabian and Russell, 1974). SOR has been demonstrated to be applicable in the online shopping context (see, for example, Kim and Johnson, 2016; Liu et al., 2016). Environmental inputs are often analyzed within the SOR paradigm, and the influences of social factors are frequently evaluated within distinct organisms such as e-service quality (White, Joseph-Mathews and Voorhees, 2013), cognition, and affect (Li et al., 2012). Wang et al. (2007) integrates social response theory and SOR to create a conceptual model to examine the effects of web site socialness perceptions on pleasure and arousal. Li et al (2012) applies an extended environmental psychology SOR framework in the mobile consumption experience, to examine if media richness can lead to positive effects on pleasure and arousal while using mobile devices. Research has called for new approaches that will enhance current theoretical approaches by integrating aspects of social influence theories (Gan, 2017). This current research proposes to address this gap by adapting an SOR framework incorporating socialness perception as a retailer-manipulated cue and the perception of media richness as a retailer-manipulated mobile cue. The following sections evaluate the interrelations between socialness perception, involvement, media richness and emotions, within the SOR framework.

2.2 Social response theory

Social response theory holds that individuals treat computerized machines as social actors (Moon, 2000; Nass and Moon, 2000; Nass et al., (1997), Huang and Lin, 2011). Disagreement can occur due to the interactivity between humans and a particular channel, which causes effects on subsequent interactions (Moon, 1998a; Moon, 1998b). Social conventions, that occur in human-human interactions, are analyzed within human-computer interaction (Wang et al., 2007), including politeness (Nass, Moon and Carney, 1999), reciprocity (Moon, 2000), and inter-dependency between team mates (Nass, Fogg and Moon, 1996). It is suggested that humans develop relationships with computerized machines, which are psychologically similar to relationships with individual(s) (Wang et al., 2007; Huang and Lin, 2011).

Social response theory also examines psychological boundaries related to human-computer relationships; these are considered to be constructed through computerized machines' behavioral characteristics (Moon, 2000). The theory states that humans are socially oriented

(Nass and Moon, 2000). Humans tend to apply a number of heuristic behaviors to avoid a variety of information processing tasks (Huang and Lin, 2011). Research evidence suggests that mindlessness is one reason for these responses (Nass and Moon, 2000). Langer (1989) demonstrates that computerized communication cues stimulate a variety of human response scripts. Humans tend to respond automatically to the computerized machine using their own scripts (Wang et al., 2007). The theory assumes that consumers' preferences favor familiar information sources (Steuer and Nass, 1993). Human's interactions with computerized machines remain broadly similar (Moon, 2000), and are exemplified by a variety of interpersonal social behavioral rules (Moon, 2000). Social responses can therefore constitute an important component of human-computer interactions and accordingly will be incorporated into the conceptual framework of this current study.

2.3 Media richness theory

Media richness theory is derived from information processing theory and refers to communication efficiency between individuals who are affected by media fitness (Daft and Lengel, 1984; Daft and Lengel, 1986; Trevino, Lengel and Daft, 1987). Media richness relates a medium's ability to convey a variety of information, (Daft and Lengel, 1984; 1987; 1986), Media richness is based on four criteria: capacity for immediate feedback, language variety including body, natural and numeric languages, capacity for personal focus and capacity for multiple cues, including body gestures, (Daft and Lengel, 1984; 1987).

Richer media allows users to communicate in an immediate way, improving the understanding of ambiguous messages (Dennis and Kinney, 1998). Electronic media is not as rich as face-to-face communications, due to lack of voice tone with natural language. However, video clips, fast feedback, and natural language usage can enhance richness (Vickery et al., 2004). This research proposes to examine perceptions during media use, applying media richness theory (Dennis and Kinney, 1998; Rice, 1992).

This research proposes to extend the SOR framework by integrating the extensions proposed by Wang (2007) and Li et al (2012) whereby constructs of media richness and socialness perception are integrated within an environmental psychology framework with the addition of the outcome response of WOM. The proposed SOR theoretical extension employing WOM as the response outcome in the framework is discussed in the following section.

2.4 WOM and Environmental Psychology O to R Responses

Environmental psychology research examining both emotional and cognitive aspects finds that pleasure and arousal organism responses have a significant influence on WOM (Ladhari, 2007). Ha and Im (2012) identify significant effects between retail environment cues, emotional effects and WOM intention (R). WOM is posited as being a significant construct in the mobile context (Ha and IM, 2012). Mobile pure-play retailers (smart retailers) are attempting to replicate the social side of shopping including positive WOM on mobiles using instant messages (Gan, 2017). Evaluating consumer WOM behaviors in this channel in terms of the media richness and social response constructs will contribute to a deeper understanding of human-computer interactions.

3. Research model and hypotheses development

3.1 Socialness Perception

Wang et al. (2007) note that socialness perception has a positive influence on emotional bonds within an organisation. “Socialness” is defined as the phenomenon of human beings regarding computerized machines as social actors (Reeves and Nass, 1996; Steuer and Nass, 1993). Short et al., (1976) state that human-computer interactions are positively affected by the social sense and an individual’s loyalty is improved by high quality social interaction and social environments (Oliver, 1997). In the context of this study, the socialness perception of WeChat is the extent to which humans detect ‘socialness’ in a WeChat account, which elicits the WeChat user’s social responses, including excitement, entertainment, and enjoyment (Wakefield et al., 2011). In the context of this paper, enjoyment refers to the extent to which WeChat users enjoy using WeChat (Huang and Li, 2013), and enjoyment plays a critical role in stimulating consumers to use the service (Nysveen, Pedersen and Thorbjornsen, 2005; Zhou and Lu, 2011). Deng, Lu, Wei and Zhang (2010) define the social value of MIM as the benefits users can obtain during MIM usage. WeChat is a type of MIM, used to communicate users’ emotions of belonging in order to improve the perceived social value (Deng et al., 2010). Research indicates that socialness perception of websites is closely related to enjoyment, and has a significant influence on users’ purchase intentions and WOM (Huang and Li, 2013). Users may have positive emotions towards WeChat (Huang and Li, 2013), which may lead to higher levels of positive WOM. Thus, computer-based socialness perception has a positive direct influence on arousal and pleasure (Wang et al, 2007). Based on these arguments, the following hypotheses are proposed:

- *H1: Socialness perceptions have a positive effect on pleasure during WeChat usage.*
- *H2: Socialness perceptions have a positive effect on arousal during WeChat usage.*
- *H9: Socialness perceptions will have a positive effect on involvement during Wechat usage.*
- *H11: Socialness perceptions will have a positive effect on WOM during Wechat usage.*

3.2 Involvement

Involvement is an aroused goal-oriented status that a consumer has towards a particular product or activity (Cheung and To, 2011; Mittal, 1989; Rothschild, 1979). Richins and Bloch (1986) argue that involvement relates to situational or enduring aspects. Enduring involvement can stimulate a hedonic emotion when consumers spend time experiencing the shopping process (Jayawardhena and Wright, 2009; Machleit and Eroglu, 2000). For mobile shoppers, the hedonic aspects are at least as important as the utilitarian ones (Gao, Waechter, & Bai, 2015; Kang, Mun, and Johnson, 2015, Zaman et al, 2010). In this study, involvement represents the extent to which consumers focus on the act they are experiencing when using WeChat (Huang and Li, 2013). When consumers are involved, they concentrate on the experience, chat with friends, enjoy retailer WeChat messages, or link to the retailers WeChat site. This concentration results in enhanced communication effectiveness and improves the user experience (Huang and Li, 2013), which positively influences users’ emotional connections during WeChat usage. Message contents are highly interrelated with cognitive involvement (Smith *et al.*, 2013; Zaichkowsky, 1994). Affective involvement is stimulated by emotions, hedonic motivations, feelings, and aesthetics of personal relevance (Smith *et al.*, 2013; Zaichkowsky, 1994). Therefore:

- *H3: Involvement has a positive effect on pleasure during WeChat usage.*
- *H4: Involvement has a positive effect on arousal during WeChat usage.*

3.3 Media Richness

Based on the functional value of the MIM context, WeChat has practical benefits, such as sending texts, images, and multi-image-text messages, voice chatting, news browsing, in-app shopping, brand message gathering, music listening, and so on (Deng *et al.*, 2010). Compared to lean media, rich media has many benefits when conveying complex messages in order to improve task performance (Pollach, 2008). Consumers concentrate more on the capability of media information dissemination than the sender's emotional state (Pollach, 2008), and richer media can result in a more positive affective state when feelings and emotions are able to be shared during the information exchange process (Pollach, 2008; Daft and Lengel, 1986; Daft *et al.*, 1987; Lengel and Daft, 1989). Consumers using new media-rich mobile technologies can therefore enrich their mobile experience as well as improving pleasure and arousal during usage (Li *et al.*, 2012; Davis, 2010). This leads to the following hypotheses:

- *H5: Media Richness has a positive effect on pleasure during WeChat usage.*
- *H6: Media Richness has a positive effect on arousal during WeChat usage.*
- *H10: Media Richness has a positive effect on involvement during WeChat usage.*

3.4 Emotion: Pleasure and Arousal (Organism)

Emotion is evoked when someone or something is being evaluated and, according to the SOR paradigm, is affected by stimuli in the environment (Kawaf and Tagg, 2012). Russell and Mehrabian (1977) identify the PAD scale of emotion, which includes pleasure, arousal, and dominance. The PAD model has been applied many times in the consumer emotions context (Koo and Ju, 2010; Bjork, 2010; Donovan *et al.*, 1994). However, recent research into online retail excludes the dimension of dominance (Li *et al.*, 2012; Koo and Ju, 2010), as pleasure and arousal can adequately capture the appropriate emotional range in consumer decision making (Koo and Ju, 2010).

Pleasure is defined as an individual's situational feeling – the degree of joyfulness, happiness, or satisfaction in an online shopping environment (Menon and Kahn, 2002; Koo and Ju, 2010), and can range from unhappiness to extreme happiness (Huang, 2003). Arousal can be defined as an individual's feeling – the degree of motivation, activeness, alertness, or excitement, in an online shopping environment (Koo and Ju, 2010). Recent studies also demonstrate and examine the positive link between emotions and behavioral intentions (Lin and Liang, 2011). Empirical research studies also provide evidence to support the relationship between emotion, stimulated mobile commerce service, and behavioral intention (Li *et al.*, 2012; Liu and Li, 2011). Li *et al.* (2012) also state that positive emotions can lead to a positive influence on shopping behaviors and outcomes, finding a positive interrelation between emotion (pleasure and arousal) and behavioral intentions (positive word-of-mouth communications). This leads to the following hypotheses:

- *H7: Pleasure has a positive effect on positive WOM.*
- *H8: Arousal has a positive effect on WOM.*
- *H13: Arousal has a positive effect on pleasure*

3.5 Positive word-of-mouth (WOM)

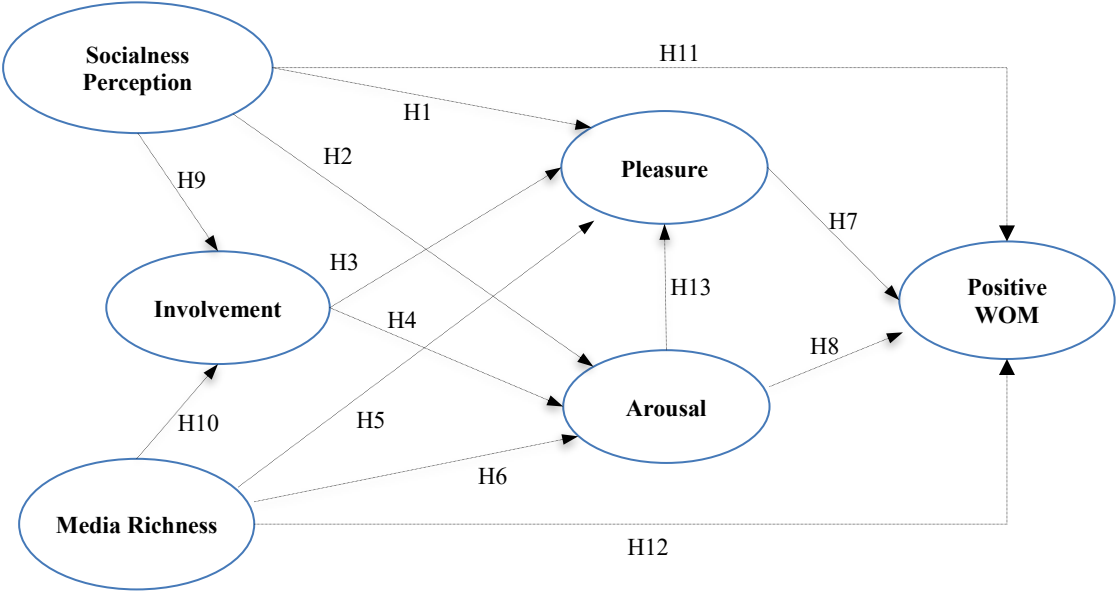
Word-of-mouth (WOM) is considered to be the most effective form of promotion, highly valued by marketers (Dye, 2000; Goldsmith, 2006). WOM is also a general term for opinion searching or informal conversation (Goldsmith, 2006). Emotions derived from experiences such as product usage can induce positive or negative WOM (Kozinets, 2002). Jayawardhena

and Wright (2009) noted that positive emotions such as pleasure and arousal have positive influences on WOM, which stimulate customers to action and enhance relationships (Gelb and Johnson, 1995; Jayawardhena and Wright, 2009). WOM is a powerful social communication tool that can persuade people to trust each other rather than marketers' communications, in determining the credence for a message (Goldsmith, 2006). Because such persuasive information may have high credibility, expertise and attractiveness, frequent personal contacts will have a superior perceived value, and significantly affect consumer behavior (Goldsmith, 2006). WOM is also extended to the internet form as well as to new channels including mobile commerce, which implies a new opportunity to connect with consumers online through communicating about socially beneficial information (Goldsmith, 2006).

Ho and Dempsey (2010) define eWOM as consisting of “*email, instant messaging, and other communication media that is of high addressability in nature*” (Ho and Dempsey, 2010: p.1000). Marketers aim to spread positive eWOM through sending messages to consumers as personal communication rather than mass communication (Ho and Dempsey, 2010). This research investigates the effectiveness of positive WOM in a new MIM communication channel – WeChat.

Figure 1 illustrates the proposed conceptual framework. Socialness perception and media richness are treated as independent constructs, acting through mediating constructs of involvement, pleasure and arousal to influence word-of-mouth (WOM) in the MIM human to computer interaction context. The more social and media rich a channel is perceived to be the more likely it is that humans feel involved in that channel and consequently feel emotional satisfaction with the interaction. Finally the above antecedents and mediators translate into positive WOM.

Figure 1. Conceptual Framework of MIM communications behaviour



In sum, this study explores the inter-relationship of MIM communications and emotional responses linking with positive WOM in the smart retail channel context. The theoretical contributions comprise the extension of current environmental psychology frameworks relevant to the MIM context. The extended framework aims to validate suggested

interrelationships between the social constructs of socialness perception, the human-computer constructs of media richness and positive word of mouth as a response. Media richness and socialness perception are expected to generate a significant effect on involvement, and influence positive WOM.

4. Research Methodology

4.1 Data Collection and Sample

This research focuses on examining social aspects of a leading Chinese pure-play retailer's WeChat environment. The leading pure-play fashion retailer in China was chosen as a leading innovator in retailer brands and user of full media-rich MIM WeChat communication (Tencent, 2015). Sector analysis indicates that pure-play retailers in China are lead innovators of smart retail channels (Tencent, 2015). The fashion sector is also a highly tactile product area and additional social media and smart channel use aids adoption and satisfaction (Blazquez, 2014). The sample of young, generation Y, Chinese WeChat young female social media users was considered appropriate, given the fashion context and the leading retailers use of the WeChat channel (Gao et al., 2013, Blazquez, 2014, Kantar, 2015). A quantitative methodology was adopted in this study with a purposive and snowballing sampling method. Ethical clearance was sought and granted prior to data collection. The sample comprised of 486 female Chinese consumers aged between 18 and 29. Eighty-three percent of the sample were college educated. Seventy-seven percent of the sample shopped online several times a month. All the respondents had previously shopped with the pure-play retailer, and had also all previously clicked through to a WeChat link sent by the retailer. 50% of the respondents clicked onto the pure play retailers WeChat links several times a month. The sample was primarily 18-30 years old, female, pure-play fashion shoppers being relatively high users of the retailer's WeChat communication platform. The online survey was promoted through a WeChat link, via an email list of a large Chinese university, permission was sought and granted and ethical clearance was also sought and granted. A controlled mock WeChat account was developed to target fashion WeChat pure-play consumers using the WeChat interface, which included a combination of social mobile stimuli messages (socialness perception, involvement, and media richness). A representative sample of the retailer's WeChat messages were selected, comprising of a combination of multi-graph-text messages, voice messages, text messages, and photo messages. All respondents received each message type in turn in the same sequence until finally they were directed to the survey, to complete a questionnaire based on their experience of the mock WeChat account. The method provided a controlled WeChat environment for all respondents.

4.2. Instrument development

The conceptual framework illustrated in Figure 1 consists of one outcome variable—positive WOM (PWOM), and five antecedents – socialness perception (SP), involvement (I), media richness (M), pleasure (P) and arousal (A). Items to measure these constructs were drawn from pre-validated research and were slightly modified to suit the context of the study. Socialness Perception items were taken from Wang et al., (2007), the Involvement items were taken from Zaichkowsky (1985), the Media Richness items from Daft and Lengel (1986), the Emotion (Pleasure) items were taken from Raghunathan and Irwin (2001), the Emotion (Arousal) items from Mehrabian and Russell, (1974), and the Positive WOM items from Maxham and Netemeyer (2002a, 2002b, 2003). The items were measured using 7-point Likert-type and Semantic differential scales.

5. Results

Data analysis followed a two-stage approach to evaluate the reliability and validity of the measurement model, followed by fitting the structural model to test the research hypotheses.

5.1 Measurement Model

A confirmatory factor analysis (CFA) was performed using IBM SPSS Amos in order to test the measurement model. Common model-fit measures were used to assess the model's overall goodness of fit. Chi-Square, Relative Chi-Square, GFI, RMSEA, NFI, CFI, TLI, and PNFI are all in the acceptable range (Figure 2). The CFA thus indicates good model fit. Reliability and convergent validity were assessed by construct reliability (CR) and average variance extracted (AVE) respectively (Table 1). The composite reliability (CR) of the constructs ranges from 0.713 to 0.935, exceeding the threshold value of 0.7. The average variance extracted (AVE) of the constructs ranges from 0.556 to 0.741, exceeding the threshold value of 0.5 (Schumacker and Lomax, 2010; Hair et al, 2014). Discriminant validity was assessed by demonstrating that the AVEs of each construct are larger than the square of the correlations between constructs, indicating satisfactory discriminant validity as per Fornell and Larcker (1981), in Table 1.

Table 1. Squared Correlations Between Constructs

	Positive WOM	Arousal	Socialness Perception	Involvement	Pleasure	Media Richness	
Positive WOM	0.816						
Arousal	0.473	0.856					
Socialness Perception	0.633	0.476	0.746				
Involvement	0.476	0.709	0.476	0.803			
Pleasure	0.521	0.785	0.499	0.757	0.861		
Media Richness	0.712	0.475	0.734	0.511	0.495	0.746	Note: AVEs are in

the diagonal

5.2 Structural Model

Fit indices for the structural model indicate a good fit (Relative Chi-Square=3.082, GFI=0.904, RMSEA=0.066, NFI=0.924, CFI=0.947, TLI=0.937, PNFI=0.776). Table 2 illustrates the results of the hypotheses with a summary of SEM paths estimates (β), t-values (t), and p-values (p). Ten of the original hypotheses are supported. Three were rejected.

Table 2. Hypothesis and Results

Hypotheses	Estimate β	t-value	p-value	Results
H1: Socialness perceptions have a positive effect on pleasure during WeChat usage. (SP>P)	.085	2.337	*	Supported
H2: Socialness perceptions have a positive effect on arousal during WeChat usage. (SP>A)	.174	3.697	***	Supported
H3: Involvement has a positive effect on pleasure during WeChat usage. (I>P)	.389	8.004	***	Supported
H4: Involvement has a positive effect on arousal during WeChat usage. (I>A)	.639	12.911	***	Supported
H5: Media Richness has a positive effect on pleasure during WeChat usage. (MR >P)	-	-	-	Not supported
H6: Media Richness has a positive effect on arousal during WeChat usage. (MR>A)	-	-	-	Not supported
H7: Pleasure has a positive effect on positive WOM. (P>PWOM)	.206	4.134	***	Supported
H8: Arousal has a positive effect on positive WOM. (A>PWOM)	-	-	-	Not supported
H9: Socialness Perception > Involvement (S>I)	.255	4.417	***	Supported
H10: Media Richness > Involvement (MR>I)	.403	7.400	***	Supported
H11: Socialness Perception > Positive WOM (SP>PWOM)	.271	4.492	***	Supported

H12: Media Richness > Positive WOM (MR>PWOM)	.514	8.909	***	Supported
H13: Arousal>Pleasure (A>P)	.474	9.503	***	Supported

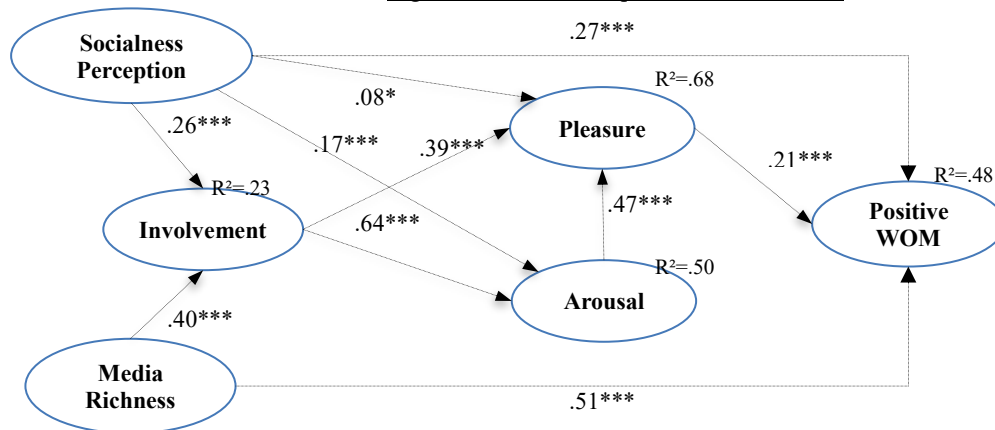
Notes: *p<0.05, **p<0.01, ***p<0.001

Involvement R²=0.23; Arousal R²=0.50; Pleasure R²=0.51; Positive WOM R²= 0.48

6. Discussion

This study has evaluated the effect of socialness perception, involvement, media richness, pleasure, and arousal on positive WOM, through WeChat usage in the context of the mobile instant messaging (MIM) smart retail channel. Socialness perception and involvement have positive direct effects on both arousal and pleasure. These antecedents also have a significant influence on positive WOM.

Figure 2. Structural equation model results



Notes: Chi-Square= 598.0; Df= 194; Relative Chi-Square= 3.082; GFI= .904; RMSEA= .066; NFI= .924; CFI= .947; TLI= .937; PNFI= .776

Three hypotheses were not supported. Two of these concern media richness, which is confirmed as a significant antecedent variable, acting through involvement and also having a direct link to positive WOM (but its effects on pleasure and arousal are only indirect, acting through involvement). Similarly, the effect of arousal on WOM was only an indirect relationship, acting through pleasure. The unsupported relationships are all linked to the arousal construct similar to other studies that have also found difficulties with arousal responses in the mobile context (Gao, 2015, Gan, 2015) which may suggest that the mobile context is less immediately arousing than a physical retail environment.

6.1 Socialness Perception

The findings indicate support for H1 and H2, in that socialness perception has a significant positive effect on pleasure ($\beta=0.85$, $t=2.337$, $p<0.05$), and a highly significant positive influence on arousal ($\beta=0.174$, $t=3.697$, $p<0.001$). These findings extend previous work suggesting the positive influence of WeChat messages in generating positive emotional responses, such as excitement (Huang and Li, 2013). If messages are perceived to be social and helpful, consumers experience pleasure and are more likely to share information. Supporting prior research (e.g. Koo and Ju, 2010), consumers' aroused states can also lead to feelings of pleasure.

Socialness perception is also found to have a significant effect on positive WOM ($\beta=0.271$, $t=4.492$, $p<0.001$) directly. Positive WOM can enhance satisfaction for both

information-seeking receivers and information sharing communicators (Cheung and Thadani, 2012). The high social perceived quality of the messages can thus help attract new consumers via positive WOM. WeChat shoppers will share positive WOM if they have positive experiences from helpful messages. Retailers who can create the most social messages for WeChat users are therefore likely to accrue higher levels of recommendations from existing WeChat shoppers.

6.2 Involvement

Consistent with prior research (e.g. Jayawardhena and Wright, 2009; Smith et al., 2013), involvement has a significant positive link with emotions such as pleasure ($\beta=0.389$, $t=8.004$, $p<0.001$), and arousal ($\beta=0.639$, $t=12.911$, $p<0.001$). The results strengthen prior research that indicates that involvement can positively affect a consumer's approach behaviors (Behe, Bae, Huddleston and Sage, 2015; Pan, 2014; Mitchell, 1986). WeChat consumers that feel involved will receive more pleasure from the WeChat shopping experience. The results indicate that consumers felt relatively high levels of involvement and experienced more enjoyment and excitement when they joined the WeChat shopping environment.

6.4 Media richness

Extending prior findings of Brunelle (2009), media richness including the varied communication channels in WeChat (such as active chatting with customer service), information exchange, emotional, or attitudinal communication has a powerful positive effect ($\beta=0.514$, $t=8.909$, $p<0.001$) on positive WOM. The strength of the direct media richness relationship with WOM is an indication of both the significance of mobile instant messaging as a brand communication tool and the high quality perception of the medium's messages. This pure-play Chinese retailer has communicated effectively with its mobile consumers using a media rich channel. The strongest direct effects in the study are from media richness directly to positive WOM, which indicates the strategic significance of media rich communications in a mobile context. The WeChat channel enables media rich communications, which allows consumers to use a variety of heuristics to communicate with the retailer in a more social and natural manner.

6.5 Pleasure, arousal and positive WOM

Pleasure has a direct positive effect on positive WOM ($\beta=0.206$, $t=4.134$, $p<0.001$). Prior research indicates that pleasure plays a vital antecedent role in MIM WeChat usage and adoption (Li et al., 2012). Das (2013) finds that there is a direct link between joy and WOM. Emotions derived from experiences including WeChat information share, WeChat usage and services can induce positive WOM (Kozinets, 2002). Positive emotion such as pleasure derived from the WeChat experience, can significantly affect positive WOM, stimulate potential WeChat consumers to action and enhance the relationship when WeChat consumers interact with other consumers/ e-retailers (supporting Gelb and Johnson, 1995; Jayawardhena and Wright, 2009). When WeChat shoppers are satisfied with the MIM WeChat shopping experience, they are more likely to provide recommendations to friends to shop through the retailer's WeChat account. Finally, existing WeChat consumers will influence their friends to purchase fashion products through the WeChat smart retail channel.

The findings also reveal that arousal has a significant positive influence ($\beta=0.474$, $t=9.503$, $p<0.001$) on pleasure, but no direct effect with positive WOM in the WeChat communication channel. The results indicate that the degree of the feelings of motivation, activeness,

alertness, or excitement, can lead to the emotional responses of joyfulness, happiness, or satisfaction, in the WeChat environment, consistent with prior research by Menon and Kahn (2002); and Koo and Ju (2010). Arousal plays a critical role in enhancing pleasure and achieving positive WOM. Individuals who experience positive emotions go on to provide positive WOM to other WeChat friends and users.

7. Conclusion

This study proposed three research questions, concerning consumers' perceptions of socialness perception, media richness and emotional involvement in the MIM channel. The findings indicate that the channel has significant socialness perceptions relationships that directly impact WOM and involvement. Media richness has provided some of the most significant results in study, indicating that the channel is in fact, perceived by users as media rich and this leads to feelings of involvement in the channel. Finally, the research aimed to examine perceptions of emotional engagement. Two arousal relationships were not supported, which is in line with other studies (Gao, 2015), it maybe that computer-human channels link more effectively with involvement first and then to pleasure and WOM. Arousal is perhaps best evoked in a physical setting; in contrast feelings of involvement and pleasure can perhaps be evoked in via a mobile computer-human channel.

The findings have demonstrated the empirical implications of the social MIM brand-consumer communications and integrated emotional factors into an environmental psychology framework in a MIM context. On a mobile smart retail channel such as WeChat, media richness has powerful direct links with positive word of mouth, which has substantial implications for Chinese mobile strategies. Research has indicated that building relationships with consumers is more difficult when the relationships are consumer-computer as compared to consumer-person (Poon et al., 2012; Pantano and Migliarese, 2014). The findings of this study suggest that these negative effects can be alleviated by the use of MIM, which is associated with consumer involvement, emotional connections and positive word of mouth.

7.1 Contributions to theory and managerial implications

This study makes several important contributions. First, to the authors' knowledge, this study is original in integrating socialness perception, media richness and WOM into the SOR framework. The study thus establishes and confirms a new conceptual framework of MIM communications for pure-play mobile consumers. Second, this study draws attention to the strong direct effects between media richness and positive WOM and also direct effects between socialness perception and positive WOM. Third, it is one of the first to validate the effects of socialness perceptions of the MIM communication channel with Chinese consumers. The study has indicated that the channel is perceived as both social and media rich and that this has direct effects on positive WOM for pure-play retailers.

This study extends the literature on mobile marketing (Blazquez, 2014, Dennis et al., 2016, Gao et al., 2013) by exploring consumers socialness perceptions of the MIM experience. Prior studies explored consumer acceptance of mobile retailing (Gao et al., 2013) and consumer experience in mobile shopping (e.g. Blazquez, 2014, Dennis et al., 2016). This research goes further in explaining how the negative effects of the computer-consumer relationship can be alleviated by the use of MIM, which is associated with socialness perception, media richness, consumer involvement, emotional connections and positive WOM. The findings illustrate the extent to which consumers are willing to provide WOM in the MIM channel, and that this new consumption experience is perceived by consumers as emotional and

involving. Our findings extend previous research in the mobile and online retail environment (Gao et al., 2013, Li et al., (2015) and Koo and Ju (2010). To the authors' knowledge, this study is original in integrating socialness perception, media richness and WOM into the SOR framework and is the first study exploring these constructs in the MIM context, deepening understanding of consumers relationships with computers and adding insights to previous studies, Kim et al (2016) and Kang et al (2015).

There are a number of managerial insights from the study. First, retailers need to be aware of the significant level of consumer engagement with positive WOM in MIM applications. The need to communicate daily with consumers via MIM channels in China is of high strategic importance. Second, these channels are perceived as being social and media rich and the MIM channel is also one that engenders feelings of involvement with a retailer in a mobile setting. This is important given the growing numbers of young mobile consumers in China and globally. Given that this channel is a vehicle for positive WOM via mobiles, and mobile consumer numbers are growing faster than any other retail channel, the results imply that retailers' need to be aware of the extent to which consumers are willing to engage with MIM applications and to nurture these consumer-computer relationships accordingly. Retailers should aim to provide a more social and media rich mobile experience, developing mobile competences and capabilities to deal with the emerging mobile social channel, integrating social and media rich functionalities in their mobile offering.

7.2 Limitations and future research

There are a number of limitations associated with this research. First the sample is composed of female respondents, which limits the generalizability. Respondents were between 18 and 30 years-old, which may not reflect younger or older customers' preferences. A controlled mock-up WeChat account was created with selected messages from a pure play fashion retailer's WeChat account. Future research might utilize retailers' live MIM accounts and also control for credibility of varying sources that can influence WOM communication (Ho and Dempsey, 2010). Notwithstanding these limitations, to the authors' knowledge, this study is original in integrating socialness perception, media richness and WOM into the SOR framework. Future research could apply and replicate this model with larger samples, with male respondents and with samples from different sectors.

References

Alhabash, S., Chiang, Y.-h., & Huang, K. (2014). MAM & U&G in Taiwan: Differences in the uses and gratifications of Facebook as a function of motivational reactivity. *Computers in Human Behavior*, 35, 423-430.

Behe, B.K., Bae, M., Huddleston, P.T. & Sage, L. (2015) The effect of involvement on visual attention and product choice, *Journal of Retailing and Consumer Services*, 24, pp. 10-21.

Bjork, P. (2010) Atmospherics on tour operators' web sites: web site features that stimulate emotional response, *Journal of Vacation Marketing*, 16(4), pp. 283-296.

Blázquez, M. (2014) Fashion shopping in multichannel retail: The role of technology in enhancing the customer experience. *International Journal of Electronic Commerce* 18: 97-116.

Brunelle, E. (2009) Introducing Media Richness into an Integrated Model of Consumers' Intentions to Use Online Stores in Their Purchase Process, *Journal of Internet Commerce*, 8(3-4), pp. 222-245.

Calvo-Porrá, C., & Levy-Mangin, J.-P. (2015). Switching behavior and customer satisfaction in mobile services: analyzing virtual and traditional operators. *Computers in Human Behavior*, 49, 532-540.

Cheung, C. M. K., and Thadani, D. (2012) The impact of electronic word-of-mouth communication: A literature analysis and integrative model. *Decision Support Systems*, 54(1), pp. 461–470.

Cheung, M.F.Y. & To, W.M. (2011) Customer involvement and perceptions: The moderating role of customer co-production, *Journal of Retailing and Consumer Services*, 18, pp. 271-277.

Christodoulides, G., Michaelidou, N., & Argyriou, E. (2012). Cross-national differences in e-WOM influence. *European Journal of Marketing*, 46(11/12), 1689-1707.

CNNIC, (2016) Report on user behavior of social media in 2015. Retrieved 2016-04-08, from: <http://www.cnnic.net.cn/hlwfzjy/hlwzxb> CNNIC.

Daft, R. L., & Lengel, R. H. (1986). Organizational information requirements, media richness and structural design. *Management Science*, 32(5), pp. 554-571.

Daft, R. L., Lengel, R. H., & Trevino, L. K. (1987). Message equivocality, media selection, and manager performance: Implications for information systems. *MIS Quarterly*, 11(3), pp. 355-366.

Daft, R.L. & Lengel, R.H. (1984) Information richness: A new approach to managerial behaviour and organizational design. Cited in Cummings, L.L. and Staw, B.M. (Eds.), *Research in organizational behaviour*, 6, pp. 191-233.

Das, G. (2013) The Effect of Pleasure and Arousal on Satisfaction and Word-of-Mouth: An Empirical Study of the Indian Banking Sector, *The Journal for Decision markers*, 38(2), pp. 95-104.

Davis, R. (2010) Conceptualizing fun in mobile commerce environments, *International Journal of Mobile Communications*, 8(1), pp. 21-40.

Deloitte (2012) The dawn of mobile influence- discovering the value of mobile in retail. Deloitte Digital, www.deloitte.com, accessed 19.11.14.

Deng, Z., Lu, Y., Wei, K.K. & Zhang, J. (2010) Understanding customer satisfaction and loyalty: An empirical study of mobile instant messages in China, *International Journal of Information Management*, 30, pp. 289-300.

Dennis, A.R. & Kinney, S.T. (1998) Testing Media Richness Theory in the New Media: The Effects of Cues, Feedback, and Task Equivocality, *Information Systems Research*, 9(3), pp. 256-274.

Dennis, C., Alamanos, E., Papagiannidis, S., Bourlakis, M., (2016) Does social exclusion influence multiple channel use? The interconnections with community, happiness, and well-being. *Journal of Business Research*, 69 (3) pp. 1061–1070

Donovan, R., Rossiter, J.R., Marcoolyn, G. & Nesdale, A. (1994) Store Atmosphere and Purchasing Behavior, *Journal of Retailing*, 70(3), pp. 282-294.

Donovan, R.J. & Rossiter, J.R. (1982) Store atmosphere: An environmental psychology approach,

Journal of Retailing, 58(1), pp. 34-57.

Dye, R. (2000) The buzz on buzz, *Harvard Business Review*, 78, November/December, pp. 139-146.

Ferreira, D., Goncalves, J., Kostakos, V., Barkhuus, L. & Dey, A.K. (2014) Contextual experience sampling of mobile application micro-usage, *Proceeding MobileHCI '14 Proceedings of the 16th international conference on Human-computer interaction with mobile devices and services*, pp. 91-100.

Fornell, C. and Larcker, D.F. (1981) Evaluating structural equation models with unobservable variables and measurement error, *Journal of marketing research*, 18(1), pp. 39-50.

Forrester Research (2014) Mobile Trends for Marketeers, Forrester Research, (January) www.Forrester.com. Accessed 08.02.15.

Fortunati, L. & Taipale, S. (2012) Women's Emotions Towards The Mobile Phone, *Feminist Media Studies*, 12(4), pp. 539-548.

Gao, T., Rohm, A., Sultan, F., Pagani, M., (2013) Consumers un-tethered: a three-market empirical study of consumers' mobile marketing acceptance, *Journal of Business Research*, 66, pp. 2536–2544.

Gao, L., Waechter, K. A., & Bai, X. (2015). Understanding consumers' continuance intention towards mobile purchase: a theoretical framework and empirical study- A case of China. *Computers in Human Behaviour*, 53, 249-262.

Gan, C., (2017) Understanding Wechat users' liking behavior: An Empirical Study in China. *Computers in Human Behavior*, 68, 30-39.

Gan, C., & Wang, W. (2015). Uses and gratifications of social media: A comparison of microblog and WeChat. *Journal of Systems and Information Technology*, 17(4), 351-363.

Gelb, B. & Johnson, M. (1995) Word-of-mouth communication: causes and consequences, *Journal of Health care Marketing*, 15(3), pp. 54-58.

Goldsmith, R.E. (2006) Electronic Word-of-Mouth, cited in Khosrow-Pour, M. (2006), *Encyclopedia of E-Commerce, E-Government, and Mobile Commerce*, Hershey, PA: Idea Group Publishing.

Goldsmith, R. E., Flynn, L.R., and Clark, R. A., (2012) Materialistic, brand engaged and status consuming consumers and clothing behaviours, *Journal of Fashion Marketing and Management: An International Journal*, 16 (1), pp. 102-119.

Ha, Y., & Im, H. (2012). Role of web site design quality in satisfaction and word of mouth generation. *Journal of Service Management*, 23(1), 79-96.

Hair, J. F., Black, W. C., Babin, B. J., and Anderson, R. E. (2014) *Multivariate Data Analysis Pearson New International Edition* (7th ed.). Edinburgh Gate: Pearson Education Limited.

Han, S., Min, J., & Lee, H. (2015). Antecedents of social presence and gratification of social connection needs in SNS: A study of Twitter users and their mobile and non-mobile usage. *International Journal of Information Management*, 35(4), 459-471.

Ho, J.Y.C. & Dempsey, M. (2010) Viral marketing: Motivations to forward online content, *Journal of Business Research*, 63, pp. 1000-1006.

Huang, M., (2003) Modeling virtual exploratory and shopping dynamics: an environmental psychology approach *Information & Management*, 41 (1) 39–47.

-
- Huang, J.W. & Lin, C.P. (2011) To stick or not to stick: The social response theory in the development of continuance intention from organizational cross-level perspective, *Computers in Human Behavior*, 27(5), pp. 1963-1973.
- Huang, P. & Li, M. (2013) Analyzing Mobile Instant Messaging User Satisfaction and Loyalty: An Integrated Perspective, *Association for Information Systems ECIS 2013 Research in Progress*, pp. 1-8.
- IMRG (2014) 'China Passport 2014 Cross-Border Trading Report: Your guide to international e-trading', *IMRG reports*.
- IMRG (2016) 'China Passport 2016 Cross-Border Trading Report: Your guide to international e-trading', *IMRG reports*.
- iResearch (2014) 'WeChat commercial value research', *iResearch*, *eCommerce reports*.
- Jayawardhena, C. & Wright, L.T. (2009) An empirical investigation into e-shopping excitement: antecedents and effects, *European Journal of Marketing*, 43(9), pp. 1171-1187
- Kang, J.-Y. M., Mun, J. M., & Johnson, K. K. P. (2015). In-store mobile usage: downloading and usage intention toward mobile location-based retail apps. *Computers in Human Behaviour*, 46, 210-217.
- Kantar. (2015). A 2014 report on China social media influence. Retrieved 20 July 2015, from: <http://cn.kantar.com/media/633232/2014.pdf>
- Kawaf, F. & Tagg, S. (2012) Online shopping environments in fashion shopping: An SOR based review, *The Marketing Review*, 12(2), pp. 161-180.
- Kim, M. J., Chung, N., Lee, c., and Preis, M.W., (2015) Motivations and use context in mobile tourism shopping: Applying contingency and task-technology fit theories, *International Journal of Tourism Research*, 17 (1), 13-24.
- Kim, A.J., and Johnson, K.K.P., (2016) Power of consumers using social media: Examining the influences of brand-related user-generated content on Facebook *Computers in Human Behavior*, 58, pp. 98-108.
- Kim, H., & Niehm, L. S. (2009). The impact of website quality on information quality, value, and loyalty intentions in apparel retailing. *Journal of Interactive Marketing*, 23(3), 221-233.
- Kimbrough, A. M., Guadagno, R. E., Muscanell, N. L., & Dill, J. (2013). Gender differences in mediated communication: Women connect more than do men. *Computers in Human Behavior*, 29(3), 896-900.
- Koo, D. M. & Ju, S. H. (2010) The interactional effects of atmospherics and perceptual curiosity on emotions and online shopping intention, *Computers in Human Behavior*, 26(3), pp. 377-388.
- Kozinets, R.V. (2002) The field behind the screen: using netnography for marketing research in online communities, *Journal of Marketing Research*, 39(1), pp. 61-71.
- Ladhari, R. (2007). The effect of consumption emotions on satisfaction and word-of mouth communications. *Psychology & Marketing*, 24 (12), 1085-1108.
- Langer, E.J. (1989) *Mindfulness*, MA, US: Addison-Wesley Longman.

-
- Lengel, R.H. & Daft, R.L. (1989) The Selection of Communication Media as an Executive Skill, *The Academy of Management Executive*, 2(3), pp. 225-232.
- Li, M., Dong, Z.Y. & Chen, X. (2012) Factors influencing consumption experience of mobile commerce, *Internet Research*, 22(2), pp. 120-141.
- Li, X., Chen, W., & Popiel, P. (2015). What happens on Facebook stays on Facebook? The implications of Facebook interaction for perceived, receiving, and giving social support. *Computers in Human Behavior*, 51(Part A), 106-113.
- Li, H., Liu, Y., Xu, X., Heikkila, J., & van der Heijden, H. (2015). Modeling hedonic IS continuance through the uses and gratifications theory: An empirical study in online games. *Computers in Human Behavior*, 48, 261-272.
- Lin, J.-S.C. & Liang, H.-Y. (2011) The influence of service environments on customer emotion and service outcomes, *Managing Service Quality*, 21(4), pp. 350-372.
- Liu, H., Chu, H., Huang, Q. and Chen, X. (2016). Enhancing the flow experience of consumers in China through interpersonal interaction in social commerce. *Computers in Human Behavior*, 58, pp.306-314.
- Liu, Y. & Li, H. (2011) Exploring the impact of use context on mobile hedonic services adoption: an empirical study on mobile gaming in China, *Computers in Human Behavior*, 27(2), pp. 890-898.
- Machleit, K.A. & Eroglu, S.A. (2000) Describing and measuring emotional response to shopping experience, *Journal of Business Research*, 49, pp.101-111.
- Maxham III, J.G. & Netemeyer, R.G. (2002a) Modeling Customer Perceptions of Complaint Handling Over Time: The Effect of Perceived Justice on Satisfaction and Intent, *Journal of Retailing*, 78 (4), pp. 239-252.
- Maxham III, J.G. & Netemeyer, R.G. (2002b) A Longitudinal Study of Complaining Customers' Evaluations of Multiple Service Failures and Recovery Efforts, *Journal of Marketing*, 66, pp. 57-71.
- Maxham III, J.G. & Netemeyer, R.G.(2003) Firms Reap What They Sow: The Effects of Shared Values and Perceived Organizational Justice on Customers' Evaluations of Complaint Handling, *Journal of Marketing*, 67, pp. 46-62.
- Mehrabian, A. & Russell, J.A. (1974) *An Approach to Environmental Psychology*, Cambridge, MA: MIT Press.
- Menon, S. & Kahn, B.E. (2002) Cross-category effects of induced arousal and pleasure on the Internet shopping experience, *Journal of Retailing*, 78(1), pp. 31-40.
- Mitchell, A.A. (1986) Theoretical and methodological issues in developing an individual-level model of advertising effects, *Advertising & Consumer Psychology*, 3, pp. 172-196.
- Mittal, B. (1989) Measuring purchase-decision involvement, *Psychology and Marketing*, 6, pp.147-162.
- Moon, Y. (1998a) The Effects of 'Canned' Personalization on Outcomes in an Interactive Marketing Situation, *Working Paper No. 99-040*, Harvard Business School, Boston, MA 02163.
- Moon, Y. (1998b) When the Computer is the 'Salesperson': Consumer Responses to Computer 'Personalities' in Interactive Marketing Situations, *Working Paper No. 99-041*, Harvard Business

School, Boston, MA 02163.

Moon, Y. (2000) Intimate Exchanges: Using Computers to Elicit Self-Disclosure from consumers, *Journal of Consumer Research*, 26, pp. 323-339.

Mummalaeni, V. (2005) An empirical investigation of web site characteristics, consumer emotional states and on-line shopping behaviors. *Journal of Business Research*, 58(4), pp. 526–532.

Nass, C. & Fogg, B.J. and Moon, Y. (1996) Can Computers be Teammates, *International Journal of Human Computers Studies*, 45(6), pp. 669-678.

Nass, C.I. & Moon, Y. (2000) Machines and mindlessness: Social response to computers, *Journal of Social Issues*, 56(1), pp. 81-103.

Nass, C.I., Moon, Y., & Carney, P. (1999) Are People Polite to Computers? Responses to Computer-Based Interviewing Systems, *Journal of Applied Social Psychology*, 29(5), pp. 1093-1110.

Nass, C.I., Moon, Y., Morkes, J., Kim, E.Y. & Fogg, B.J. (1997) Computers Are Social Actors: A Review of Current Research, cited in Friedman, B. (ed.) *Human Values and the Design of Computer Technology*, Stanford, CA: CSLI Publications, pp. 137-163.

Nysveen, H., Pedersen, P.E. & Thorbjornsen, H. (2005) Intentions to use mobile services: Antecedents and cross-service comparisons, *Journal of the Academy of Marketing Science*, 33(3), pp. 330-346.

Oliver, R.L., Rust, R.T. & Varki, S. (1997) Customer delight: Foundations, findings, and managerial insight, *Journal of Retailing*, 73, pp. 311-336.

Pan, P., (2014). Toward an integrated model of purchase intention of dietary supplements in sexually oriented advertising, *The Journal of Food products Marketing*, 20 (2), 132–145.

Pantano E., Migliarese P. (2014). Exploiting consumer-employee interactions in technology-enriched retail environments through a relational lens. *Journal of Retailing and Consumer Services*, 21(6), 958-965.

Pantano, E., and Priporas, C.-V. (2016). Mobile retailing effect on consumption experiences: A dynamic perspective. *Computers in Human Behavior*, 61: 548-555.

Pantano, E. and Timmermans, H. (2014) What is smart for retailing?, *Procedia Environmental Sciences* 22: 101-107.

Pollach, I. (2008) Media Richness in Online Consumer Interactions: An Exploratory Study of Consumer-Opinion Web Sites, *Information Resources Management Journal*, 21(4), pp. 49-65.

Poon, P., Albaum, G., Chan, P.S.-F. (2012). Marketing trust in direct selling relationships. *Marketing Intelligence and Planning*, 30(5), 588–603.

Raghunathan, R. and Irwin, J.R. (2001) Walking the Hedonic Product Treadmill: Default Contrast and Mood-Based Assimilation in Judgements of Predicted Happiness with a Target Product, *Journal of Consumer Research*, 28(3), pp. 355-368.

Reeves, B. & Nass, C.I. (1996) *The Media Equation*, Stanford, CA: CSLI Publications.

Rice, R. E. (1992). Task analyzability, use of new media, and effectiveness: A multi-site exploration of media richness. *Organization Science*, 3(4), pp. 475-500.

-
- Richins, M.L. and Bloch, P.H. (1986) After the New Wears off: The Temporal Context of Product Involvement, *Journal of Consumer Research*, 13(2), pp. 280-285.
- Rothschild, M.L. (1979) Advertising strategies for high and low involvement situations, cited in Maloney, J. and Silverman, B. (1979) Attitude research plays for high stakes. Chicago: AMA, pp. 74-93.
- Russell, J.A. & Mehrabian, A. (1977) Evidence for a three-factor theory of emotions. *Journal of Research in Personality*, 11(3), pp. 273-294.
- Tencent, (2015) 2015 Interim Report Retrieved, 2015-05-25 from: <http://tech.qq.com>.
- Tencent. (2016a). 2016 interim report. Retrieved 2016-05-18, from: <http://tech.qq.com/a/20160518/067853.htm>.
- Tencent. (2016b). Report on WeChat. Retrieved 2016-03-21, from: http://mp.weixin.qq.com/s?__biz=MzA5NDMxMTAyMg%4%&mid%402733938&idx%41&sn%4de14d96ecbde2ac6be9a99c8a4a3b6bf&scene%45&srcid%40909GW3fjWRU4TizgUXXaI8b#rd.
- Trevino, L.K., Lengel, R.K. & Daft, R.L. (1987). Media Symbolism, Media Richness and media Choice in Organizations. *Communication Research*, 14(5), 553-574.
- Schumacher, R. E., and R. G. Lomax. (2010) *A Beginner's Guide to Structural Equation Modeling* (3rd Edition), New York: Taylor & Francis Group .
- Short, J., Williams, E. & Christie, B. (1976) *The Social Psychology of Telecommunications*. Wiley, London.
- Smith, R., Deitz, G., Royne, M.B., Hansen, J.D., Grunhagen, M. & Witte, C. (2013) Cross-cultural examination of online shopping behavior: A comparison of Norway, Germany, and the United States, *Journal of Business Research*, 66, pp. 328-335.
- Steuer, J. & Nass, C. (1993) Voices, Boxes, and Sources of Messages Computers and Social Actors, *Human Communication Research*, 19(4), pp. 504-527.
- Vickery, S.K., Droge, C., Stank, T.P., Goldsby, T.J. & Markland, R.E. (2004) The Performance Implications of Media Richness in a Business-to-Business Service Environment: Direct Versus Indirect Effects, *Management Science*, 50(8), pp. 1106-1119.
- Vieira, V.A. (2013) Stimuli-organism-response framework: A meta-analytic review in the store environment, *Journal of Business Research*, 66(9), pp. 1420-1426.
- Wang, Y.S. & Liao, Y.W. (2007) The conceptualization and measurement of m-commerce user satisfaction, *Computers in Human Behavior*, 23(1), pp. 381-398.
- Wakefield, R., Wakefield, K., Baker, J. et al. (2011) How website socialness leads to website use. *European Journal of Information Systems*. 20: 118-132.
- Westbrook, R.A. (1987) Product/ consumption-based affective response and postpurchase processes, *Journal of Marketing Research*, 24, pp. 258-270.
- White, R.C., Joseph-Mathews, S. & Voorhees, C.M. (2013) The effects of service on multichannel retailers' brand equity, *Journal of Services Marketing*, 27(4), pp. 259-270.
- Zaichkowsky, J. (1994) The personal involvement inventor: reduction, revision, and application to advertising. *Journal of Advertising*, 23, pp. 59-70.

Zaichkowsky, J.L. (1985) Measuring the involvement construct, *Journal of Consumer Research*, 12, pp. 341-352.

Zaman, M., Rajan, M.A. & Dai, Q. (2010) Experiencing flow with instant messaging and its facilitating role on creative behaviors, *Computers in Human Behavior*, 26, pp. 1009-1018.

Zhou, T., & Lu, Y. (2011). Examining mobile instant messaging user loyalty from the perspectives of network externalities and flow experience. *Computers in Human Behavior*, 27(2), 883–889.

Zhou, T., (2011) Understanding online community user participation: a social influence perspective, *Internet Research*, 21 (1), 67-81.