TRANSFORMATION OF RELATIONAL SOCIAL CAPITAL TO PURCHASE INTENTION IN VIRTUAL ENGAGEMENTS AT QQ CHINA

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QQ China features interactive and connective online channels that generate social relational resources, encourage individual engagement, and facilitate embedded economic potential. The objectives of this research are to describe QQ users' demographics and virtual behavior characteristics, to identify the underlying dimensions of relational social capital and virtual engagement, and to investigate the impacts of social capital and virtual engagement on purchase intention.

Results from an analysis of data (n = 216) from China reveal the significant impacts of relational social capital and virtual engagement on purchase intention. First, functional purchase motivations, channel usage, and purchasing behaviors are captured to portray characteristics among QQ's users. Second, trust, identification, and norm of reciprocity are primary antecedents to predict purchase intention in QQ. Third, three dimensions of relational social capital facilitate QQ users' virtual engagements. Finally, information seeking and knowledge creation leads to product purchase intention.

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CHAPTER 1

INTRODUCTION

With explosive rise in popularity, QQ has become the largest virtual community in China. Grounded in 637 million active users of instant messaging (IM), the QQ community provides diverse virtual platforms by employing interactive channels of searching, blogging, gaming, transaction, and social networking (Morgan Stanley, 2010), which generate the varied virtual engagement on the part of users. For instance, QQ has over 20 types of social games integrated with IM and real-time multi-player online games, and the interactive tools such as bulletin message boards and chatting tools facilitate users' communication with other QQ games players (Morgan Stanley, 2009; Tencent.com, n.d.). According to Tencent's interim report of 2010, QQ game users' accounts have reached up to 6.2 million simultaneously online users who are able to buy virtual goods in these entertainment-oriented environments. Indeed, the resilient social and virtual relationships are synergized by interactivity and connectivity among QQ users, and this catalyzes users' engagement resulting in virtual goods, leading to $35 billion in wealth creation over 11 years (Morgan Stanley, 2009).

Consumer behavior as intentional social action is affected by social identities of self-categorization, affective commitment, and group-based self-esteem (Bagozzi, 2000). In other words, individuals access and utilize social embedded resources to "gain returns in instrumental actions and expressive actions" (Lin, 2001, p. 21). These intangible resources are conceptualized as social capital, which is exhibited in any context of social network (Andrews, Preece, & Turoff, 2002; Brown & Reingen, 1987), brand-based community (McAlexander, Schouten, and Koenig, 2002; Muniz & Schau,

2005), and individuals' identities within a group (Bagozzi, 2000). In QQ's proactive engagement among users and virtual community, the concept of social capital features relationships (Blanchard & Horan, 1998) and online participation behaviors (Bagozzi & Dholakia, 2002; Dholakia, Bagozzi, & Pearo, 2004), since the virtual community's resources continuously exert their influence on the usage of online social networks (Dholakia et al., 2004; Hsu & Lu, 2007; Wasko & Faraj, 2005; Wellman, Salaff, Dimitrova, Garton, Guila, & Haythornthwaite, 1996). Due to multi-faceted virtual engagement in QQ China, it is necessary to identify how social capital signifies virtual engagement and how it induces engagement. As a critical asset at the community level and individual level, social capital in relational dimension contributes to facilitating actions within a structure and motivating individual participation (Wasko & Faraj, 2005). Relational social capital also facilitates affective and collective actions such as knowledge contribution (Nahapiet & Ghoshal, 1998). Relational social capital exists when group members trust others (Blanchard & Horan, 1998), have an expectation of repayment from others (Gouldner, 1960; Onyx & Bullen, 2000), and find self-identity within the structure (Bergami & Bagozzi, 2000).

When relational resources are generated and optimized within the social networks, the interactive and connective features motivate individuals' interactivity and connectivity by signifying individuals' engagement. Researchers (Kearsley & Schneiderman, 1998) define engagement as embracing cognitive activities and behavioral actions. The narrow viewpoint of emotional engagement is characterized in previous studies as emphasizing personal affective commitment (Douglas & Hargadon, 2001; Heath, 2007; Mollen & Wilson, 2010). Social media integrated with interactive

features improves users' behavioral commitment towards the virtual community as can be seen in their information and knowledge contribution (Brown & Duguid, 1991; Nahapiet & Ghoshal, 1998; Wasko & Faraj, 2005). Thus, engagement measurement of significant behavioral aspects is needed to examine consumer's commitment (Mollen & Wilson, 2010). If consumers take such dual roles as those of consumers and producers (Humphreys & Grayson, 2008; Ritzer & Jurgenson, 2010) in QQ China, their behavioral patterns extend to engagement contexts including especially searching, sharing, creating, purchasing, and entertaining activities. People access virtual communities to search for information in order to reduce uncertainty and gather information (Andrew et al., 2002; Bellman, Johnson, Lohse, & Mandel, 2006; Schlosser, 2003), to gain insights on knowledge shared in the virtual learning communities (Burnett, 2000; Hsu, Ju, Yen, & Chang, 2007; Koh, Kim, Butler, & Bock, 2007), to consume the real products in C2C transaction communities (Lu, Zhao, & Wang, 2010), and to obtain services in some gaming communities (Guo & Barnes, 2007; Shin, 2008; Wu & Liu, 2007). These intersecting roles, which lead to collaboration among consumers, are becoming popular in social network sites such as Facebook and Twitter (Ritzer & Jurgenson, 2010) as well as QQ.

Social capital affects the community by transforming the relationship standing into the transaction standing (Lin, 2001), which depicts how economic value is accumulated and distributed (Lin, 2001). Transactional capital as profit-centered exchanges such as exchanges of products and services is facilitated in order to form elements of economic leverage within the virtual community (Balasubramanian & Mahajan, 2001). In addition to economic potential, transactional capital can be further

categorized into social consumption interests (Nelson & Otnes, 2005) and purchase outcomes (Frenzen & Davis, 1990; Mathwick, Wiertz, & Ruyter, 2008). This study exploits the QQ user's purchase intention at an individual consumption level as latent of transactional capital in the industry level.

To gain insight into social capital and virtual engagements, this study explores the transformation of relational social capital into purchase intention with the emphasis on virtual engagements. By focusing on the QQ phenomenon in China, three research objectives are specified: (1) to describe QQ users' demographics and virtual behavior characteristics; (2) to identify the underlying dimensions of relational social capital and virtual engagements; and (3) to investigate the impacts of relational social capital and virtual engagements on purchase intention. In addition to the theoretical investigation, this study addresses what the features within social network are and what explicit behavioral patterns present through individuals' engagement in the virtual environment from a practical perspective. It expands the theoretical scope on the transformation of social capital into purchase intentions in social network sites in addition to studying the practical applications of virtual engagements to virtual behaviors.

Purpose of Study

In the context of the interactivity and connectivity of social networks in QQ, social capital wields great influence in embodying virtual engagements and purchase intention. Taking into consideration the extant literature related to the subject, this study purposed to explicate the transformation of relational social capital into purchase intention, emphasizing virtual engagement in QQ. Three research objectives are specified: (1)

understanding QQ users' virtual behaviors in conjunction with their demographic circumstances; (2) identifying the underlying dimensions of relational social capital and virtual engagements in the perspective of QQ users; and (3) investigating influences of relational social capital on virtual engagements and purchase intention. This approach allows e-service providers' and researchers' efforts to be more effective in comprehending environmental influences on individuals' engagement and purchase outcomes in social networks.

In the following paragraphs, this study first presents the literature related to social capital and virtual engagement. A research model that consists of 21 hypotheses is presented next, followed by the report of an empirical study based on a survey to test the research model. This study then concludes by discussing the implications of the study as well as directions for future research.

Assumptions

I assumed that the respondents would answer truthfully and that the sample set consists of consumers who have some experience within QQ.

Operational Definitions

Identification: Identification is personal conceptions of "self" through defining features of the environment and interactions with other group members (Bagozzi & Dholakia, 2002).

Information seeking: Information seeking means a searching behavior with the purpose to reduce uncertainty. The information seeking behavior consists of individual seeking behavior and interactive seeking behavior (Lin, 2007; Sismeiro & Bucklin, 2004).

Knowledge creation: Knowledge creation refers to professional information creation by consumers in virtual communities. It is the process of collective and collaborative production (Humphreys & Grayson, 2008, Ritzer & Jurgenson, 2010).

Norm of reciprocity: Norm of reciprocity is mutual reciprocity that participants perceive in virtual communities (Chiu et al., 2006).

Purchase intention: Purchase intention refers to consumer's intention to purchase, which is measured to predict actual purchase behavior (Bennett & Harrell, 1975; Morrison, 1979). To capture the individual economic entities in QQ, user's purchase intention needs to be researched.

Shared Interactions: Shared interactions include information exchange (Burnett, 2000) as well as emotional and peer-group support (Wellman and Gulia, 1999).

Social capital: Social capital stands for the attributes of virtual community that contribute to coordination, cooperation, and achievement of mutual benefit (Putnam, 1995).

Trust: Trust ensures social relationships and individuals' commitment and stickiness to the community. Three types of trust in virtual communities are specified as economy-based trust, information-based trust, and identification-based trust, (Hsu et al., 2007).

Virtual community: A virtual community is an online social network based on shared interests and goals (Blanchard & Horan, 1998; Chiu, Hsu, & Wang, 2006).

Virtual engagement: Virtual engagement refers to an activity involving a series of emotional and behavioral activities such as “cognitive processes, reasoning, decision-making, problem-solving and evaluation” (Kearsley & Schneiderman, 1998). To capture engagement with behavioral footprints, this study identifies virtual engagments as comprised of information seeking, knowledge creation, and shared interactions.

CHAPTER 2

REVIEW OF LITERATURE

This chapter introduces the QQ phenomenon in China and presents the literature related to social capital and virtual engagment along with the research model.

The QQ Phenomenon in China

QQ China is an online instant messaging (IM) system, where users can employ a peer-to-peer service to communicate with remote friends, family, or even strangers (Dong, Hui, & He, 2006). This IM system also allows users to access online games, social networking sites, a consumer-to-consumer (C2C) website, a search engine site, and other platforms. As a tool for entertainment and online connectivity, QQ enjoyed 77% of market share in IM in 2004 (Morgan Stanley, 2005). In this virtual community, the population act in dual roles of both user and consumer. Users participate in the social network in order to seek information, interact with others, and play online games. Meanwhile, they buy tangible or virtual products through a C2C transaction channel or virtual-good transaction channels. QQ has received annual virtual goods revenue of $723 million, which was up to 95% of global revenue in 2008 (Morgan Stanley, 2009).

QQ as an IM platform is integrated with five channels, where participants are able to engage in a variety of virtual activities. More specifically, non-game virtual goods include QQ Pet and QQ Show, while online games contain social games and real-time multi-player online games. As a C2C site, Paipai, built in 2006, aims to attract a large part of QQ's user base. Furthermore, QQ Friend is regarded as a social networking site with a social function similar to that of Facebook, while Qzone and Weibo are developed

to facilitate the function of blogging. A search engine incorporated within QQ named Soso provides convenience for QQ's users to search for, create, and share information and knowledge. Besides, as a premium IM tool, QQ enables users to interact with others with common topics or interests through the contact lists (Gao & Cao, 2010) and QQ groups. Furthermore, there are five approaches by which QQ can monetize its virtual community: an online auction site, social games integrated with IM, avatar sales, and real-time multi-player online games and premium IM (Morgan Stanley, 2009). Through all virtual gaming channels, virtual purchasing behavior is prevalent. Five channels, their related attributes and their websites are illustrated in Table 1.

Table 1

QQ Channels, Attributes, and Website.

QQ Channel	***QQ Attribute***		***QQ Website***
Channels with virtual goods transaction	Non-games	QQ Pet	http://pet.qq.com/
		QQ Show	http://show.qq.com/
	Online games	Social Games	http://game.qq.com/
		Real time multi-player online games	
C2C transaction site	Paipai		http://www.paipai.com/
Social networking site	QQ Friend		http://home.pengyou.qq.com
Blogs	Q-zone		http://qzone.qq.com/
	Weibo		http://t.qq.com/
Search engine site	SOSO		http://www.soso.com/

Morgan Stanley (2010) considers QQ to be a similar social network to Facebook. QQ is the largest social networking community in China, with 637 million active IM users, while Facebook is the largest global networking community with 620 million visitors. While Facebook creates diverse user experience by offering different applications, QQ integrates diverse channels in order to increase user engagement. Facebook has introduced credits as virtual currency to allow users to download several applications or to purchase virtual good, while Q-coin is used as virtual currency in QQ

(Morgan Stanley, 2010). With Q-coins, consumers purchase virtual goods including avatars, online game and non-game items, and seven colored-diamond services to strengthen their capacity and virtual status in the QQ community.

Consumers' virtual behaviors are comparable in QQ and Facebook; however, the user's social identity is unlike. Facebook primarily relies on real identity, with users having real pictures and names, to build up online social networking (Morgan Stanley, 2010). Users in QQ IM create virtual identities by customizing individual avatars and consuming game items (Morgan Stanley, 2010). Nevertheless, QQ Friend, as a social networking website, enables users to facilitate real identity just as Facebook does. Different from other chatting tools, QQ IM offers unique communication experiences. First, users talk peer to peer, and they can create QQ groups based on shared interests for real-time discussion. Second, the contact lists can be created according to users' online or offline relationships with others. Finally, QQ accommodates users' willingness to have interactions with strangers (Meng & Zuo, 2008).

Table 2

Distinctions between QQ and Facebook.

Network Feature	*QQ*	*Facebook*
Population	637 million active IM users	620 million visitors
Popularity	Mostly China	Global context based on English language use
Platform	Community	Application
Virtual currency	Q-Coin	Credit
Online identity	Virtual identity and Real identity	Real identity

The channels and all of QQ's attributes allow a large population of participants to act in the double roles of user and consumer. Observation of activity on the QQ website shows that archetypal virtual behaviors are expanding as virtual engagement including information seeking, knowledge creation, shared interactions, product purchasing, and

entertaining activities. For instance, in QQ IM, participants are able to join different QQ groups to share ideas and viewpoints on a particular topic with those virtual "friends" who have common interests, while they may also engage in one conversation only for seeking some specific information. Through shared interactions, online relationships are strengthened. In the meantime, users make contributions to knowledge building within the virtual community. To date, the concept of information-seeking behavior is given a broader meaning (e.g., including cognition and motivation) since engagement is being paid attention to in the information age (Mokros & Aakhus, 2002). Besides, users enjoy playing and acting with the role of consumer in the channels with virtual goods transactions. Compared with the traditional transaction communities, QQ places an emphasis on the virtual consumption business.

Social Capital

Traditionally, many researchers (Nahapiet & Ghoshal, 1998; Putnam, 1995; Tsai & Ghoshal, 1998) have used the term *social capital* to denote the trends of individual and social relationships in physical communities. Social capital refers to "the features of social organization, such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit" (Putnam, 1995 p. 66). Tsai and Ghoshal (1998) classify social capital as having structural, relational, and cognitive dimensions. Since the social capital perspective has been applied in diverse contexts such as the advent of TV (Putnam, 1995) and the company environment (Nahapiet & Ghoshal, 1998), many researchers have shown that social capital enhances professional practice and increases the capability of knowledge within a social collective. This study begins the

literature review from the traditional perspective on social capital with emphasis on its underlying dimensions.

The Dimensionality of Social Capital

Previous research classifies social capital as having three dimensions: the structural dimension, the relational dimension, and the cognitive dimension (Chiu, Hsu, & Wang, 2006; Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998; Wasko & Faraj, 2005). To explore value creation, Tsai & Ghoshal (1998) propose four dimensions of social capital of a firm: structural dimension (social interaction ties), cognitive dimension (shared vision), and relational dimension (trust and trustworthiness). In a similar context, the notion of social capital is employed to investigate organizational advantages: structural dimension (network ties, network configuration, and appropriate organization), cognitive dimension (shared codes and language, shared narratives), and relational dimension (trust, norms, obligations, identification) (Nahapiet & Ghoshal, 1998).

The researchers consider social interaction ties as the structural aspect of social capital (Tsai & Ghoshal, 1998). Ties refer to relationships in virtual communities (Wellman et al., 1996). Researchers gain insights into the motivations that encourage people to participate in virtual communities in terms of social influences of the virtual environment. Snowden (1998) suggests that strong relationships within a community are able to improve environmental conditions. When the participants try to develop social relationships online, this social connection also has a significant impact on their virtual behaviors (Bandura, 1989). Previous research has revealed that participants participate in virtual communities not only due to information seeking and sharing but also because of receiving a sense of belongingness, finding connections, and building

social networking (Andrews et al., 2002; Zhang & Hiltz, 2003). Moreover, three types of ties are identified to be related to virtual community engagement: strong ties, weak ties, and stressful ties (Wellman et al., 1996). Wellman and Worley (1990) reveal that community ties and social support strengthen knowledge sharing as personal behavior. In the context of virtual communities, the active and positive interactions among members increase individuals' satisfaction and therefore positively impact their virtual activities (Langerak, Verhoef, Verlegh, and de Valck, 2004).

Most importantly, social capital is developed from cognitive perspectives. Shared vision shows common understandings in the organization, which facilitate both individual and group actions (Tsai & Ghoshal, 1998). Common interests between group members enhance individuals' information sharing with strangers in virtual community settings (Wasko & Faraj, 2005). These common interests are developed into "shared interests, goals, needs or practices," indicating that shared language or shared vision has profound impacts on the future of virtual community (Chiu et al., 2006, p.1875). In the short term, shared interests help group members to share valuable knowledge as well as motivating involvement in a virtual community (Chiu et al., 2006).

Bagozzi and Dholakia (2002) list the conditions of "we-intention": intention for mutual performance, intention for individual contribution to the group, individual and mutual belief for joint action, and intention for individual performance. Four presumptions are proposed as indicating when we-intention occurs: (1) a group member has an intention to take individual part of the group activity, (2) a group member believes that others will perform their own part, (3) there are mutual belief in the opportunities for joint action, (4) there are intentions to perform the group activity based

on individual performance (2) and mutual performance (3) (Tuomela, 2006). From this point, Shen, Cheung, Lee, & Chen (2010) consider we-intention as a personal subjective perception of the social context, where all participants are able to make collective efforts and contribute to a group activity together.

Emphasizing the creation of intellectual capital, Nahapiet and Ghoshal (1998) expand three dimensions of social capital as follow: (1) network ties, network configuration, and appropriable organization as the structural dimension; (2) shared vision into shared codes and language and shared narratives as the cognitive dimension; and (3) trust, norms, obligations and identifications as the relational dimension. The relationships between norms and networks are well illustrated in the context of civic engagement. According to Putnam (1995), networks of physical communities strengthen the group norms, which generalizes reciprocity. At the same time, networks foster the emergence of social trust (Putnam, 1995). Finally, coordination, communication, and collective action are regarded as outcomes, while the participants in communities change their self-sense of “I” into “we” (Putnam, 1995).

When a social identity is embodied by an interactive environment, the communication among social members is more likely to be susceptible to group influence (Postmes, Spears, & Lea, 1998). Based on social categorization theory, Bagozzi (2000) explains that this group influence is related to social identity, which implies individual perceptions of membership, emotional attachment within the group, and self-esteem engaged in collaboration. Specifically, identification processes are illustrated as personal conceptions of “self” resulting from defining features of the environment engaged in and from other group members interacted with (Bagozzi &

Dholakia, 2002). Employing the “we” identification of Putnam (1995), Bagozzi and Dholakia (2002) relate “we-intention” to the group intentions of action in virtual communities. Moreover, positive social identity is suggested to have effects on we-intentions by mediating personal desires (Bagozzi & Dholakia, 2002).

In Dholakia et al. (2004), a social influence model is applied to explore consumer participation in virtual communities, and two mediators, mutual agreement and mutual accommodation, by which group norms affect personal participation desires are indicated. Mutual agreement and mutual accommodation act as mechanisms to help to create opportunities for online social interactions (Bagozzi & Dholakia, 2002). Wasko and Faraj (2005) divide social capital of electronic networks into three categories: structural capital, cognitive capital, and relational capital, and they suggest the applications of these categories of capital. Structural capital is related to a collective’s abilty to examine individual action in a collective work such as knowledge contribution, while cognitive capital is regarded as the resources providing shared meanings within a group (Wasko & Faraj, 2005). Relational capital refers to identification within the group, trust in others, and commitment to participate in the collective and conform to the cooperative norms (Wasko & Faraj, 2005). Specifically, trustworthiness is first considered as an individual actor in the dimension of relationship (Tsai & Ghoshal, 1998). Therefore, in the context of virtual communities, structural capital is identified as centrality, while cognitive capital is comprised of self-rated expertise and tenure in the field (Wasko & Faraj, 2005). Finally, commitment and reciprocity are two actors composed of relational capital (Wasko & Faraj, 2005).

Conveying the concept of social capital to virtual communities, Blanchard and Horan (1998) specify the social capital dimensions of networks: norms, trust, and privatization of leisure time. They indicate that a virtual community eases access to interactions within the group, group rules, and trust. When spending time communicating online in a private space, users actively engage in virtual public space (Blanchard & Horan, 1998). Postmes et al. (1998) suggest that group norms and social identity define and influence the patterns of social behavior in the settings of computer-mediated communication. Other research conceptualizes virtual community participation as intentional social action. Participants engage in goal-directed behaviors when participating in a digital environment (Bagozzi & Dholakia, 2002). Besides group norms, we-intentions and social identity are said to be the effects of virtual community on the member's intentions to participate in this virtual community (Bagozzi & Dholakia, 2002).

Previous research finds that self-rated expertise, commitment, and reciprocity as social capital contribute to knowledge interactions within the communities (Wasko & Faraj, 2005). Wasko and Faraj (2005) point to self-rated expertise as an actor of cognitive social capital. It exerts a critical influence on knowledge contribution because individual experience plays a key role in predicting the sharing behavior of knowledge. Using social capital theory and social cognitive theory to investigate knowledge sharing, Chiu et al. (2006) conclude that the structure of virtual community features social interaction ties, while the relationships in virtual environment refer to trust, norm of reciprocity, and identification. Meanwhile, a virtual community enables group members to increase personal cognition of shared language as well as shared vision (Chiu et al.,

2006). Overall, Chiu et al. (2006) suggest that social interaction ties, reciprocity, and identification positively affect the quantity of knowledge sharing.

From marketing perspectives, several studies have addressed the social influence on consumer behavior in group settings. For instance, social identity directly or indirectly affects we-intentions within group-directed actions (Bagozzi, 2000). Dholakia et al. (2004) find that we-intentions have positive impacts on participation behavior, while social identity and mutual agreement indirectly influence behavioral outcomes by mediating individual desires. In the meantime, group norms are indicated to affect we-intentions, which finally impact participation behavior as an outcome (Dholakia et al., 2004). Table 3 summarizes diverse dimensions in different research contexts.

Table 3

Dimensions of Social Capital

Researcher	*Research context*	*Social Capital Construct*
Structural Dimension (Social Interaction ties)		
Putnam, 1995	Civic engagement	Networks
Chiu, et al, 2006	Knowledge sharing as communities participation	Social interaction ties
Wasko & Faraj, 2005	Knowledge sharing in online communities	Centrality
Tsai & Ghoshal, 1998	Product innovations	Social interaction ties
Wellman et al, 1996	Virtual community engagement	Strong ties, Weak ties, Stressful ties
Nahapiet & Ghoshal, 1998	Organizational advantages	Network ties, network configuration, appropriable organization
Blanchard & Horan, 1998	Virtual communities	Networks
Relational Dimension		
Trust		
Putnam, 1995	Civic engagement	Social trust
Chiu, et al, 2006	Knowledge sharing as communities participation	Trust
Tsai & Ghoshal, 1998	Product innovations	Trust & trustworthiness
Nahapiet & Ghoshal, 1998	Organizational advantages	Trust
Blanchard & Horan, 1998	Virtual communities	Trust
Hsu et al, 2006	Knowledge sharing in virtual communities	Environmental trust
Wu & Liu, 2007	Game playing	Trust in e-environment and players / It impacts indirectly personal attitudes towards playing online games.
Lu et al, 2010	Purchase intention	Trust in members: integrity/benevolence; ability; Trust in website/vendor: ability, integrity, benevolence

(table continues)

Table 3 *(continued).*

Trust		
Wu et al, 2010	transaction	Trust: ability, benevolence, integrity and predictability
Norm of Reciprocity		
Putnam, 1995	Civic engagement	Norms
Chiu, et al, 2006	Knowledge sharing as communities participation	Norms of Reciprocity
Bagozzi, & Dholakia, 2002	Virtual communities participation (chat rooms)	Group norms
Wasko & Faraj, 2005	Knowledge sharing in online communities	Reciprocity & Commitment
Dholakia et al, 2004	Virtual communities consumer participation	Group norms & Mutual agreement &Mutual accommodation
Nahapiet & Ghoshal, 1998	Organizational advantages	Norms & obligations
Blanchard & Horan, 1998	Virtual communities	Norms
Coleman, 1988	Attendance in education institution	Social norms
Postmes et al, 1998	Computer-mediated communication	Group norms, social stereotypes define the social behavior; Social identity may influence behavior
Postmes et al, 2000	e-mail discussion	Norm shapes the communication patterns within groups.
Postmes et al, 2001	Computer-mediated communication	Norms define the behavior patterns.
Bock et al, 2005	Knowledge sharing	Anticipated reciprocal relationship / Organizational climate /Sense of self-worth (influence subjective norm)
Shin, 2008	purchasing	Users' subjective norm shows an impact on behavioral intention.
Song & Kim, 2006	Use of avatar service	Subjective norms
Hsu & Lu, 2007	Consumer behavior in online game communities	Social norms have positive impacts on customer loyalty.
Hsu & Lu, 2004	Game playing	Social norms and critical mass as social influences
Identification		
Chiu, et al, 2006	Knowledge sharing as communities participation	Identification
Bagozzi, & Dholakia, 2002	Virtual communities participation (chat rooms)	Social identity
Dholakia et al, 2004	Virtual communities consumer participation	Social identity (cognitive, affective, evaluative)
Bagozzi, 2000	Consumer behavior	Social identity (self-categorization, affective commitment, group-based self-esteem)
Nahapiet & Ghoshal, 1998	Organizational advantages	Identification
Cognitive Dimension		
Shared Language/Shared Vision		
Chiu, et al, 2006	Knowledge sharing as communities participation	shared language and shared vision
Tsai & Ghoshal, 1998	Product innovations	Shared vision
Nahapiet & Ghoshal, 1998	Organizational advantages	Shared codes and language, shared narratives
We-intention		
Putnam, 1995	Civic engagement	We- intention
Bagozzi, & Dholakia, 2002	Virtual communities participation (chat rooms)	We-intentions

Relational Social Capital in QQ

The way in which social capital exists in QQ can be illustrated in a concrete example. In QQ IM, a QQ group with a Level 7 crown and 464 users accepts only the users with high-level QQ membership and limits the topics on farm and restaurant games (tencent.com, n.d.). In the meantime, this group requires real personal information and is limited to adult users (tencent.com, n.d.). When users make requests to join the group, they need to send a message indicating their QQ's membership statuses (tencent.com, n.d.). In this way, this QQ group shows its reciprocity of collective gaming and personal information. The publicity of individual profiles enables the QQ group to increase trust among group members, while the aggregation of users with QQ's membership shows specific group identification. More importantly, the level of this QQ group indicates its frequency of interactions. Based on the level policy, a Level 7 crown means a QQ group has earned 11520 points scored by sending or posting messages, visiting Qzone, uploading or downloading the digital files, creating the approved on-line activities, making comments on the messages or pictures and voting (tencent.com, n.d.). This phenomenon suggests that it is possible that the relational social capital involved in this QQ group has impacts on the frequency of virtual engagement. A similar assumption, that relational social capital motivates users' engagement in all channels of QQ, is reasonable.

Therefore, QQ in China builds an interactive and collaborative social network by providing inimitable relational social capital to their users. Because of the diversity and integration among all channels in QQ, this social capital has its own characteristics, which has seldom been indicated in previous studies. This research employs social

capital in its relational dimension to explore its impact on consumers' virtual engagement and their purchase outcomes.

Trust: Trust plays a vital role in social capital of virtual communities because most of group members build up social relationships based on trust with each other in a virtual environment where there is a lack of nonverbal information exchanged (Blanchard & Horan, 2000). The high level of trust placed in virtual community ensures member commitment and stickiness to the community (Casalo, Flavian, & Guinaliu, 2008; Wu, Chen, & Chung, 2010). In other words, trust in others and the whole environment engenders desire to receive information and response to stimulus (Ridings Gefen, & Arinze, 2002). Three types of trust in virtual communities, specified as economy-based trust, information-based trust and identification-based trust, have positive effects on a person's intentions as well as outcome behaviors (Hsu et al., 2007). On C2C websites, trust in members' integrity and benevolence leads to more purchasing, while trust in the website's ability has positive effects on the purchase intention (Lu et al., 2010). Other research implies the importance of trust in the transaction communities (Shin, 2008; Wu et al., 2010). Four factors of trust are proposed in order to examine online transactions: ability to perceive intended behavior (ability), perceptions of trusted ones' behavior (benevolence), righteous behavior (integrity), and predictability of the promised transaction (predictability) (Wu et al., 2010). In some virtual gaming communities, trust in the e-environment and in players impacts personal attitudes towards playing games (Wu & Liu, 2007).

Norm of reciprocity: Group norms positively affect behaviors in the virtual context. Postmes, Spears, and Lea (2000) suggest group norms shape the communication

patterns within groups in e-mail discussion. Group norms as well as social identity are asserted to be two determinants of virtual community participation, showing that group norms can lead to group intentions to actively participate in virtual communities (Dholakia et al., 2004). Besides, a primed group norm has more impacts on anonymous groups than on identified groups (Postmes et al., 2001). As a group norm, reciprocity positively relates to virtual behaviors.

The norm of reciprocity is considered as one component of moral codes (Gouldner, 1960). Under this moral norm, individuals help others with the expectation of repayment in the future (Onyx & Bullen, 2000). This kind of repayment as a moral obligation triggers users' participating and willingness to help others in online communities (Wasko & Faraj, 2000). In addition, the participants who anticipate reciprocal relationships with others are likely to have positive attitude towards knowledge sharing, when this subjective norm increases personal intentions of the behavior in virtual communities (Bock, Zumd, Kim, & Lee, 2005). Likewise, the cognitions of searching for reciprocal relationship and the mutual beneficial relationship are expected to affect attitudes of group members and people's intentions to engage in other virtual behaviors. For example, social norms positively influence consumer loyalty shown in repeated purchases (Hsu & Lu, 2007) and game playing (Hsu & Lu, 2004) in virtual gaming communities.

Identification: Some studies point out that social identity results in awareness of virtual community membership (Dholakia et al., 2004), a sense of emotional involvement within communities (Bagozzi & Dholakia, 2002), and motivations to foster loyal behaviors (Bergami & Bagozzi, 2000). To be specific, consumers' identification by

brand preferences shows that they make commitments to the firms and that the positive relationship between consumers and the company positively influences sales in the context of marketing (Bhattacharya & Sen, 2003). Similarly, in virtual community settings, consumers identify themselves as playing specific roles in the whole network as virtual environment and in small-group-based virtual environments (Dholakia et al., 2004).

Purchase Intention in QQ

Not only does social capital exert an influence on the relationship quality of the community, but also it affects the community as an economic entity (Michaelson, 1996; Minkoff, 1997). To capture the individual economic entities in QQ, users' purchase intention needs to be investigated. Purchase intention refers to consumers' intention to purchase, which is used to predict actual purchase behavior (Bennett & Harrell, 1975; Morrison, 1979). Purchase intention is suggested to positively impact individuals' further behaviors (Pierre, Morwitz, & Reinartz, 2005; Schlosser, White, & LIyod, 2006). Consumers' purchase intention is positively affected by external social influence (Hung, Chen, Peng, Hackley, Tiwsakul, & Chou, 2011; Tsai, 2005; Wiedmann, Hennigs, & Siebels, 2009).

In a social structure, the relationship finally leads to resource transaction, when it is developed into economic standing (Lin, 2001). Other researchers (Coleman, 1988; Putnam, 1993) assert that there are some positive economic benefits which accompany the accumulation of social capital, such as commitment to products and services involved in community. This economic concept has been seen as a different aspect of social capital (Mathwick et al., 2008). Lin (2001) also rationalizes social structure as

transactional and relational – “transactional rationality sees relationship as part of transactional gain-loss calculations, and relational rationality sees transactions as part of relational cost-benefit calculations” (p.150).

The transactional stage portrays “the accumulation and distribution of wealth, such as money” (Lin, 2001, p.150). The value of cooperative economic behavior is generalized and specified at this stage (Kenworthy, 1997; Putnam, 1993). Dhaene, Goovaerts and Kaas (2003) consider a surplus with economic cost as this transactional capital. From a business perspective, the transactional capital gauges a company’s economic performance and financial development (Corolleaur, Carrere & Mangematin, 2004; Dhaene et al., 2003). For instance, in the retail industry, the transactional capital is evaluated with inventory investment (Irvine, 1981) or sales income (Roe & Diao, 2004).

Transactional capital has been widely discussed in the context of virtual community. By utilizing and integrating the social interaction, a virtual community generates economic leverage with the purpose of profit-oriented exchanges including goods, services, and money (Balasubramanian & Mahajan, 2001). Besides, transactional capital is identified as shared consumption interests (Cova & Cova, 2001; Nelson & Otnes, 2005) and socially embedded consumption (Frenzen & Davis, 1990). The transactional capital not only exhibits the economic potential of virtual community (Balasubramanian & Mahajan, 2001) but also indicates the outcomes in this context, especially in the virtual peer-to-peer community (Mathwick et al., 2008). Thus, to capture transactional capital in this study, the concept of individual consumption was

defined and operationalized. According to the properties of goods and services offered in QQ, product purchasing behavior was examined.

Previous research explores individual's transaction in the virtual context. In virtual communities, product transaction is becoming popular in that participants are interested in home shopping (Blanchard & Horan, 1998). 43% of the participants are reported to experience online purchasing monthly (Andrew et al., 2002). Moe (2003) specifies purchasing likelihood into four types: knowledge building, hedonic browsing, directed buying and search/deliberation. During the process of making purchase decisions, consumers' personal cognitions possibly lead to different outcome behaviors (Sismeiro & Bucklin, 2004). Bellman et al. (2006) point out consumers' purchasing behavior is performed based on four approaches: price-oriented purchasing for values searching, product-oriented purchasing for merchandise options, experience-oriented purchasing for interactive shopping experiences, and environment-oriented purchasing for social trends.

With the advent of virtual currency, virtual consumption, which is identified as purchasing virtual goods with real money, is becoming a new approach to online transaction (Guo & Barnes, 2007, Lehdonvirta, 2009). However, the virtual purchasing is not limited to tangible products. Virtual consumption as virtual purchasing behaviors has been explored in some virtual gaming communities such as *Second life, Cyworld,* and *QQ*. (Guo & Barnes, 2007; Lehdonvirta, 2009; Shin, 2008). Guo and Barnes (2007) assume that online participants are inclined to buy or sell virtual products within a gaming community, relying on information "shared" and "interacted" among group members. Chung (2005) discusses purchasing behaviors of avatar-related products and

identifies virtual consumption as the process of self-identification in a virtual world. Self-identification can be realized through representation of an avatar in a virtual world (Chung, 2005). Consumers perceive these virtual representations in the emotional stage and may identify others by their virtual avatars.

Virtual Engagement

Different from social capital, which is the process of building commitment at the community level (Holt, 1997; Mathwick et al., 2008), engagement means “affective commitment to an active relationship with the brand” (Mollen & Wilson, 2010, P923) at the individual level. In a broad context of conceptualization, engagement is a stance involving a series of emotional and behavioral activities such as “cognitive processes, reasoning, decision-making, problem-solving and evaluation” (Kearsley & Schneiderman, 1998). This series of interactions with a brand is also believed to predict sales effects (Plummer, 2006). Nevertheless, many scholars merely emphasize emotional aspects of engagement by employing a cognitive framework adapted from schema theory (Douglas & Hargadon, 2001; Heath, 2007).

In the era of Web2.0, the behavioral aspects of engagement directly and significantly indicate consumers’ commitment. For example, social media creates multi-levels of engagement based on information sharing, and therefore consumers’ interactions with online advertisement (e.g. “sharing,” “downloading,” “liking,” and “following”) are suggested to measure engagement (Nesamoney, 2011). However, limited measurements equate engagement with behavioral footprints (Mollen & Wilson, 2010). Conventional and general scales to test time spent, mouse clicks, or re-visits

hardly perceive consumers' engaged affective experience (Dykes, 2008); neither do they perceive optimal consumption outcomes (Mollen & Wilson, 2010).

Virtual community facilitates computer-mediated communication including information and knowledge sharing and learning (Brown & Duguid, 1991; Nahapiet & Ghoshal, 1998; Wasko & Faraj, 2005). Currently, virtual behavior has been expanding and exceeding its original context. Mokros and Aakhus (2002) conceptualize information-seeking behavior as "meaning engagement practice" (p. 298), indicating that personal cognitions drive engagement and that engagement practice is continuously enhanced through social connections. The emerging concept of "prosumption" implies that participatory consumption allows consumers to bring values to the community (Beer & Burrows, 2010). From this standpoint, consumers' engagement differs from basic interactivity (Mollen & Wilson, 2010). Clarke (2010) defines digital engagement as "the use of interactive techniques to improve service delivery and information provision via digital media technology." The digital brand engagement enables consumers to interact and connect intensively with brands.

Related to the virtual environment, a term "virtual engagement" is assumed to describe interactive and connective engagement in virtual communities. Individuals are more active in interacting with others as well as the whole environment, which continuously strengthens individuals' connections with each other and the virtual environment. Researchers (Mollen & Wilson, 2010) propose online engagement leads to consumer behavioral outcomes. However, there are as yet no adequate scales reflecting multidimensionality of consumers' engagement with physiological correlates (Fugate, 2008; Marci, 2006; Mollen & Wilson, 2010).

To begin with an adequate perspective on virtual engagements, it is necessary to comprehend the diversity of virtual behaviors. Researchers (Barki & Hartwick, 1994; Hartwirck & Barki, 1994) suggest the virtual behaviors that the users perform in the virtual environment as an indication of user participation. Barki and Hartwick (1994) divide user participation into three types, according to the users' performance in the systematic settings: "overall responsibility, user-information system (IS) relationship, and hands-on activity" (P 59). Specifically, overall responsibility is portrayed as users' responsibilities to process the information, user-IS relationship refers to communication activities for the system development, and hands-on activity is depicted as a specific activity performed by an individual for system development (Hartwick & Barki, 1994). These three dimensions of user participation are mingled with individual and interactive behaviors in the virtual environment. For instance, users communicate within the information system when they individually take part in designed information tasks (Hartwick & Barki, 1994).

The proliferation of internet access facilitates virtual communities as critical information environments. In some systematic environments, users are regarded as group members who have common interests and shared locations because these virtual communities exist based on physical organizations such as school or governments (Blanchard & Horan, 1998). These physically based virtual communities aim to establish online connection among community members and therefore to strengthen offline relationships among group members. The counterpart is the geographically dispersed virtual community where people aggregate based on shared interests rather than shared locations. Blanchard (2004) applies the term "virtual behavior" to describe all

forms of computer communication in the context of virtual communities. In virtual communities, people share interactions and receive a sense of “place” for professional development and personal leisure (Blanchard, 2004). When feeling a sense of belonging to virtual communities, the participants and interest groups are encouraged to participate in more virtual behaviors (Blanchard, 2004).

There are six common interests in services shown by participants when they attend physically based virtual communities: education, community information through bulletin boards, communication with friends/relatives, political activities, telecommuting, and shopping (Blanchard & Horan, 1998). Similarly, Andrews et al. (2002) divide on-line community interactions into six categories of experience: “information gathering,” “E-mail,” “entertainment,” “purchasing,” “bulletin board,” and “chat room” (P13). The research suggests that 63% of users gather information daily while 43% make purchases in the virtual communities monthly, and the majority of the population use E-mail for discussion daily (Andrews et al., 2002). From the behavioral perspective, Armstrong and Hagel (1996) divided the virtual communities into four types: (1) interest communities where people share information based on common interests or particular topics, (2) relationship communities in which people get together for building relationships or social networking, (3) fantasy communities for entertainment-oriented activities, and (4) transaction communities for business purposes.

Previous studies have addressed virtual behaviors involved in a variety of virtual communities. For general communities, users search for and share information for personal purposes (Haubl & Trifts, 2000; Sismeiro & Bucklin, 2004). The interactivity of virtual environment facilitates online interactions between users, while effective

communication motivates consumers to make purchases online (Hsu et al., 2007). Table 4 summarizes the diversity within the virtual behavior context. Even though information creating and entertaining activities have emerged and developed within the Web2.0 digital environment, few studies place emphasis on this behavioral component.

Table 4

Diversity of Virtual Behaviors

Researcher	Context	Diversity of virtual behavior
Blanchard & Horan, 1998	Physically based virtual communities;	Civic engagement Digital engagement, interaction, information provision
Clarke, 2010	digital media technology	
Wu & Liu, 2007	Electronic environment	Online games playing, game experience
Hsu & Lu, 2004	Electronic environment	
Teo et al, 2003	Virtual learning communities	Information seeking and sharing Information gathering; Discussion via e-mail, bulletin board, and chat room Information exchange Interpersonal and informational interactions ;(information- oriented activities, emotional and peer group support, other types of social interactions; play) Information seeking as meaning engagement practice
Andrew et al, 2002	On-line community	
Schlosser, 2003	Virtual world	
Zhang & Hiltz, 2003	Online research communities	
Burnett, 2000	Virtual communities	
Lin, 2007	Virtual community	
Mokros & Aakhus, 2002	General environment settings	
Hsu et al, 2007	Professional virtual communities	General knowledge sharing Professional Knowledge sharing: data and message sharing in the professional community; 'third-party' information searching and interactions.
Chiu et al, 2006	General virtual communities	
Koh et al, 2007	Virtual communities	
Wang et al, 2002	Professional community Virtual tourist community	
Guo & Barnes, 2007	Virtual game communities	Purchasing Purchasing along with product information searching Pre-purchase information seeking: objective interactivity in order to reduce uncertainty on product
Shin, 2008	Web 2.0 communities with virtual currency involved	
Lu et al, 2010	Virtual communities in C2C environment	
Chung, 2005	Social virtual environments	
Bellman, et al, 2006	Electronic environments	
Haubl & Trifts, 2000	Online shopping environment	
Sismerro & Bucklin, 2004	e-commerce website	
Ritzer & Jurgenson, 2010	Web2.0	Prosumption, information value co-produce, and co-create,
Humphreys & Grayson, 2008	Virtual environment	
Harwick & Barki, 1994	Information system	User participation as a original term to describe virtual behavior
Barki & Hartwick, 1994	Information system environment	
Blanchard, 2004	General virtual communities	Shared interactions between community members, shared interactions with purchasing-oriented purposes
Wellman & Gulia, 1999	Virtual communities	
Wu et al, 2010	Virtual transaction communities as business medium	
Li, et al, 2003	e-commerce environment	Virtual experiences containing 3-D product interactions, Virtual consumption experience
Lehdonvirta, 2005	online communities	

Based on the literature review and previously proposed variables, the critical variables capturing virtual engagement are as follows:

Information seeking: In the virtual environment, people seek information to reduce uncertainty. Haubl and Trifts (2000) indicate that before purchasing a product, consumers are most likely to seek related information online. The individual seeking behavior can be considered as browsing behavior such as browsing product information (Sismeiro & Bucklin, 2004). Previous research depicts non-interactive behaviors in virtual communities, in which users act as "readers" or "listeners" to receive information or messages without response to other group members (Burnett, 2000). However, this pre-purchase information seeking behavior includes individual searching as well as interactive searching (Lin, 2007; Sismeiro & Bucklin, 2004). When one seeks information, he/she may interact with his/her friend or relative for certainty (Williamson, 1998). This seeking behavior is defined as "third-party" information searching (Wang, Yu, & Fesenmaier, 2002). The accessibility of "third-party" information indicates a process of engagement in which two actors exactly know what information they need to share (Borgatti & Cross, 2003). The sophisticated electronic technology increases consumers' interactions during information seeking. On the one hand, the message boards help consumers to obtain more appropriate product information by reviewing product information and consumer reviews (Fonner & Timmerman, 2009). On the other hand, the interactive decision aids assist shoppers by personalizing the virtual shopping environment based on consumers' preferences, which improves individuals' interactions with the virtual environment (Haubl & Trifts, 2000). In the meantime, interactivity with virtual objects is likely to entice more product seeking and even purchases (Schlosser, 2003).

Knowledge creation: The term “virtual engagement” effectively presents the options and privileges users have when they are engaged in the virtual communities. Not only do they interact with each other, but also they provide or create information (Clarke, 2010). The conceptualization of prosumption reveals how consumers act in the procedure of pre-consumption and consumption (Beer & Burrows, 2010; Humphreys & Grayson, 2008; Ritzer & Jurgenson, 2010). The interactive consumer interface enables consumers to understand, connect, and communicate with the production. For example, Ritzer & Jurgenson (2010) assert that users decide to create whatever kind of information they want to create in Youtube. The similar information provision phenomenon is also observed in Wiki, where users make collaborative efforts to create entries and knowledge (Ritzer & Jurgenson, 2010).

The intersecting roles of consumer and producer allow consumers to co-produce and co-create so that they bring values to the products (Humphreys & Grayson, 2008). Researchers (Humphreys & Grayson, 2008) identify this type of production as “collaborative production,” indicating consumers make collaborative contributions to produce values within the community. From this standpoint, the values created by the consumers can be considered as a type of knowledge widely accepted by the community because this type of professional information is produced for personal and public purposes in order to create effective understanding and communicating between consumers and the community. The new marketing incentives provide consumers more freedom to “produce and share technical, social, and cultural knowledge” (Zwick, Bonsu, & Darmody, 2008). Knowledge creation, which also plays a key role in users’ engagement in the virtual environment, is understood as a current trend in the virtual

community. Previous studies focus on knowledge creation only within the traditional organizations such as school (Hargreaves, 1999) or company (Nonaka, 2007), rather than from the individual (e.g. consumer) or virtual environmental perspectives.

Shared interactions: While information seeking behavior indicates the significance of information quality (Williamson, 1998), exchanges of information or knowledge present a process of relationship management (Bock et al., 2005; Wellman et al., 1996). Information exchange is the procedure of building up relationships within "information neighborhood" because users come across information based on common interests (Burnett, 2000). Hence, information exchange activities with interactivity can be divided into two basic types: "hostile interactive behaviors" and "collaborative or positive interactive behaviors" (Burnett, 2000). The hostile interactive behaviors are used together with "verbal violence" for anti-individual or anti-social activities; the collaborative behaviors aim to strengthen the communities, including not specifically information-oriented behaviors, information seeking, and information sharing (Burnett, 2000).

In some professional communities, the scientists share databases, cooperate on research, and exchange messages (Wang et al, 2002). Professional knowledge sharing, including collaboration and message exchange, indicates interactions in computer-based environment (Bock et al., 2005). Wellman and Gulia (1999) develop the concept of shared interactions, indicating that emotional and peer-group support and other social interactions take the major part in computer-mediated communication, compared to information exchange. When Blanchard and Horan (1998) refer to civic engagement in virtual communities' context, the term contains "connections" with

behavioral and emotional aspects. Moreover, two types of virtual communities are identified according to users' interactions. Blanchard and Horan (1998) specify two types of virtual communities, physically based virtual communities and geographically dispersed virtual communities, in which users participate in for distinct reasons. In physically based virtual communities, users' interactions are due to both shared interests and shared locations; in geographically dispersed virtual communities, people communicate just owing to their common interests in a particular topic (Blanchard & Horan, 1998). In the setting of virtual communities, Blanchard (2004) divides shared interactions into asynchronous and synchronous interactions: the former refers to group discussion via email through the medium of listservs or newsgroups; the latter refers to real-time discussion surrounding a particular topic via chatrooms or multi-user object oriented system (MOOs). In a computer-mediated community, the typical interactions include news and information sharing, problem solving, and routine communication (Koh et al., 2007).

Even though information exchange is considered as a minor part of interpersonal or social interactions in virtual communities (Wellman & Gulia, 1999), the behavior is still regarded as a significant type of shared interaction (Andrews et al., 2002; Zhang & Hiltz, 2003). In a virtual learning community, people share all kinds of information, ranging from economic and marketing to social and educational (Teo, Chan, Weib, & Zhang, 2003). The capacity to share knowledge is one determinant of the ability to sustain a virtual community, which thus creates a sense of belonging (Burnett, 2000; Teo et al., 2003; Zhang & Hiltz, 2003). On the other hand, the sustainability of virtual communities mutually drives the system usage (Teo et al., 2003). Moreover, Wasko and Faraj

(2005) state that in an organizational environment, the external networking allows participants to share information. Similarly, the network connections within the virtual communities facilitate the access to information, expertise, and ideas.

The emergence of offline communities and online communities is able to support the sharing of critical information and knowledge in a timely fashion (Koh et al., 2007). The researchers address diverse aspects of information sharing in the virtual community settings. For example, individuals share knowledge in professional virtual communities in order for purposes of problem solving at work (Chiu et al., 2006). The researchers (Chiu et al., 2006) also note that the impacts of social networks as well as personal cognition shape and control users' knowledge sharing in virtual communities, where these behaviors can be assessed by quantity of knowledge sharing and knowledge quality. From personal and environmental perspectives, Hsu et al. (2007) draw the conclusion that individual participation in virtual communities for knowledge sharing has three main objectives: 1) to obtain solutions to problems encountered at work; 2) to effectively manage knowledge; 3) to meet business purposes. In the professional virtual communities, trust plays a role as an environmental factor to motivate personal knowledge sharing behavior; self-efficacy as one of the personal impacts increases individual and community-related outcome expectations, which positively influences the knowledge sharing behaviors (Hsu et al., 2007).

Research Model

The research model is proposes that relational dimensions of social capital significantly affect users' virtual engagements and purchase intention in QQ. The

relational social capital, as an antecedent, is constituted of three capital attributes, which are trust, norm of reciprocity, and identification in accordance with the relational dimension. The virtual engagement, as an antecedent, consists of information seeking, knowledge creation, and shared interactions. As the criterion variable, purchase intention is specified as product purchasing. Conceptualization of the research constructs is demonstrated in Figure 1.

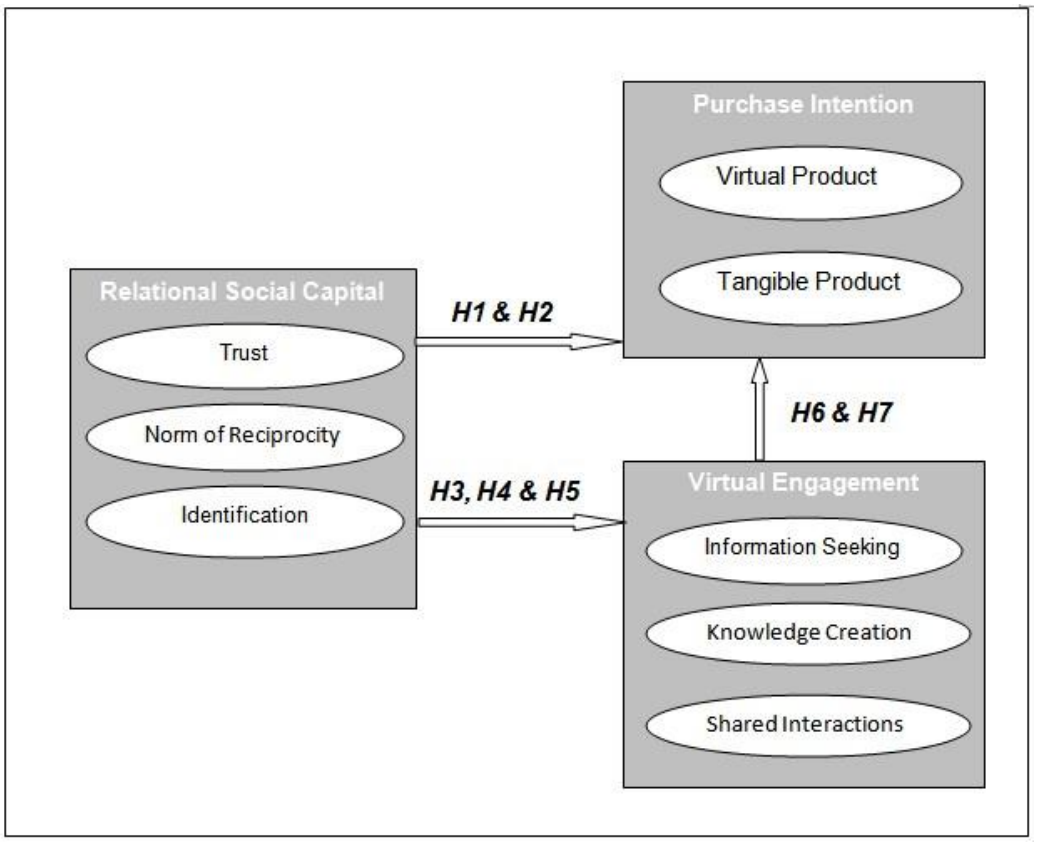

Figure 1. The impact of relational social capital on purchase intention with the effect of virtual engagement.

Problem Statement and Hypotheses

The purpose of this study was to explicate the transformation of relational social capital into the purchase intention with the emphasis of virtual engagement in QQ.

Three specific objectives are identified: (1) to describe QQ users' demographics and virtual behavior characteristics, (2) to identify the underlying dimensions of relational social capital and virtual engagement of QQ users, and (3) to investigate the impacts of social capital and virtual engagement on purchase intention. The relationships between relational social capital, virtual engagement, and purchase intention in QQ were hypothesized as follows:

H1: Relational social capital positively affects virtual product purchasing as purchase intention in QQ.

H1a: Trust positively affects virtual product purchasing.

H1b: Norm of reciprocity positively affects virtual product purchasing.

H1c: Identification positively affects virtual product purchasing.

H2: Relational social capital positively affects tangible product purchasing as purchase intention in QQ.

H2a: Trust positively affects tangible product purchasing.

H2b: Norm of reciprocity positively affects tangible product purchasing.

H2c: Identification positively affects tangible product purchasing.

H3: Relational social capital positively affects information seeking as virtual engagement.

H3a: Trust positively affects information seeking.

H3b: Norm of reciprocity positively affects information seeking.

H3c: Identification positively affects information seeking.

H4: Relational social capital positively affects knowledge creation as virtual engagement.

H4a: Trust positively affects knowledge creation.

H4b: Norm of reciprocity positively affects knowledge creation.

H4c: Identification positively affects knowledge creation.

H5: Relational social capital positively affects shared interactions as virtual engagement.

H5a: Trust positively affects shared interactions.

H5b: Norm of Reciprocity positively affects shared interactions.

H5c: Identification positively affects shared interactions.

H6: Virtual engagement positively affects virtual product purchasing as purchase intention in QQ.

H6a: Information seeking affects virtual product purchasing.

H6b: Knowledge creation positively affects virtual product purchasing.

H6c: Shared interactions positively affect virtual product purchasing.

H7: Virtual engagement positively affects tangible product purchasing as purchase intention in QQ.

H7a: Information seeking positively affects tangible product purchasing.

H7b: Knowledge creation positively affects tangible product purchasing.

H7c: Shared interactions positively affect tangible product purchasing.

CHAPTER 3

METHODOLOGY

This chapter describes the methodology in terms of sample characteristics and data collection procedures. This description is followed by the problem statement, hypotheses, instrument development, preliminary test, questionnaire translation and assumptions in methodology.

Sample and Data Collection

Institutional Review Board (IRB) approval for the protection of human subjects was attained prior to data collection and analyses. The data were collected from online respondents from China. Questionnaires were distributed to participants in an online context via Qualtrics^{TM} and emails. There were 305 responses, and a total of 284 were usable (93.1%). To achieve representativeness of active users highly engaged in QQ, a purposive sample was selected. Purposive sampling techniques are conducted based on a specific purpose and are employed in order to reach a broad group of representative cases (Tashakkori & Teddlie, 2003; Teddlie & Yu, 2007). Recruitment methods included recruiting emails with a questionnaire link attached sent via QQ IM and QQ Games, recruiting purposive subjects from campuses and 'snowballing' procedures. Qualifications for completing the questionnaires were self-determined. Participants were informed in writing that completing the questionnaire was anonymous and voluntary and that there were neither penalties nor credit for not participating.

A preliminary survey in an English version was conducted using a group of 51 respondents through a popular economic online forum (bbs.pinggu.org). The online sample was credited with virtual currency circulating within the forum. The reliability of

each construct was measured in the preliminary test by examining the Cronbach's alpha of each construct factor. The Cronbach's alpha of relational social capital dimensions ranged from .74 to .82 and virtual engagement Cronbach's alphas were from .61 to .82. The tested construct was reliable with an acceptable Cronbach's alpha. Modifications were made to the questionnaire based on the participants' feedback in order to improve readability and adaptability. For example, a purchase motivations scale was developed to capture consumers' purchase motives.

The data for this study consisted of respondents from 284 online respondents from China. The majority of the sample was collected from QQ's social games and QQ's game groups (*n* = 166, 58.45%). To increase the number of the sample population, the student sample from three universities in southeastern China was recruited through an online survey (*n* = 118, 41.55%). The demographic information and online experience is described in the first section, which is followed by data analysis. Factor analysis and multiple regression analyses are described in the following section. The chapter concludes with a section on hypotheses testing.

Instrument Development

A self-administered questionnaire was developed based on existing scales selected from the related literature. The research constructs included "social capital" (trust, norm of reciprocity, and identification), "virtual engagement" (information seeking, knowledge creation, and shared interactions), "purchase intention," and demographics information. Consumers' internal motives were examined to explore purchase motivations that trigger online shopping in QQ. A series of consumers' virtual behaviors

were explored in order to better understand actual purchase outcomes in QQ. The inclusive virtual behaviors included channel usage and purchasing behaviors, the latter consisting of purchase amount and frequency in QQ.

13 items (Chiu et al., 2006) and 2 items (Dholakia et al., 2004) were used to measure relational social capital. No existing scale had been employed to test engagement in the virtual environment. Thus, engagement was measured with items including information seeking, knowledge creation, and shared interactions. The information seeking scale was adapted from previous researches focused on consumer information acquisition and evaluation of the information seeking process (Grace-Farfaglia et al., 2006; Haridakis & Hanson, 2009). Knowledge creation was examined in the phase of knowledge quality (Chiu et al., 2006). Shared interactions were measured by means of 5 items focusing on attitude to interactions with others in the virtual community context (Bock et al., 2005). A 14-item scale of product motivation was adapted from previous studies on hedonic and utilitarian motivations for online shopping (Childers, Carr, Peck, & Carson, 2001). Purchase intention was tested with 9 items regarding consumers' intention to purchase virtual and tangible products (Shin, 2008). Minor changes were made to accommodate the context. Refer to Table 5 for research constructs.

Table 5

Research Constructs

Construct	Scale	Source
Relational social capital	15 items	Chiu et al., 2006; Dholakia et al., 2004
Virtual engagement	19 items	Bock et al., 2005; Chiu et al., 2006; Grace – Farfaglia et al., 2006; Haridakis & Hanson, 2009
Purchase motivation	14 items	Childers et al., 2001
Purchase intention	9 items	Shin, 2008
Demographic information	18 items	Gender, age, employment status, classification, major, QQ experience

The questionnaire was comprised of a cover page asking active QQ users to participate in a study about capital and virtual engagement. Three screening questions about general usage of QQ (e.g. usage frequency) determined whether participants had a QQ account and their engagement in this virtual community. Respondents' demographic information, including gender, age, and level of education, was examined for descriptive purposes in the final questionnaire.

All items were tested using a 5-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (5) as the lower and upper anchors respectively. The Likert scale was selected by virtue of its advantage in allowing intercultural questioning without systematic errors (Lee & Turban, 2001). A 5-point scale was adopted in this study to have respondents commit to either the positive or negative end of the scale with giving the respondent a neutral midpoint (Gwinner, 2009).

Translation and back-translation was employed to ensure internal consistency between the Chinese and the English versions of the instrument. The procedure included the material translation from English into Chinese and back into English, version comparison, and final discrepancies resolution (Bock et al., 2005). The repeated

translation enhances the accuracy of back- translation (Brislin, 1970; Gough, Chun, & Yang-Eun, 1968). Hence, two translation and back-translation processes were conducted. The inter-translator reliability coefficient increased from .83 to .96.

Content Validity and Construct Reliability

In the preliminary test, scale reliabilities for relational social capital were from .74 to .82. Virtual engagement reliabilities were also acceptable, with scores ranging from .61 to .82. The scales were internally consistent and able to discriminate among constructs and are adequate indicators of the theoretical constructs. To test variables' internal validity and construct reliability, reliability testing was also conducted in the main survey. The Cronbach's alpha of relational social capital scale ranged from .70 to .88, and that of virtual engagement scale was from .74 to .84. Overall, the Cronbach's alpha of constructs increased in the main test, and the scales were reliable.

Underlying Assumption and Limitation of Methodology

The information provided by the respondents on the questionnaire is assumed to be accurate and not impacted by social desirability (Dillman, 2000). It is possible that the respondents could have reported the experience that they believe should have been accomplished. The respondents could have been embarrassed at their lack of experience and, as a result, have inflated the results. One limitation is that the study includes a purposed sample only targeting college students or even younger users. This excludes active QQ users who maintain their credentials, but did not access the online survey.

CHAPTER 4

RESULTS

The demographic information is described in the first section of this chapter, which is followed by data analysis. Factor analysis and multiple regression analyses are described in the following section. The chapter concludes with a section on hypotheses testing.

Sample Characteristics

There were 284 usable online surveys returned. With an average age of respondents at 21.3, the majority of the sample was female (*n* = 157, 55.3%), full-time student (*n* = 139, 48.9%), junior level (*n* = 85, 29.9%), and majoring in art and science (*n* = 80, 28.2%). The respondents in the sample owned a QQ account, and most of the users had used QQ nearly every day in the previous two weeks (*n* = 245, 86.3%). The majority had logged in QQ for more than 6 hours each time (*n* = 120, 42.3%).

The frequency of usage of QQ's channels is a key experience indicator. QQ-experienced users were identified as those who at least "sometimes" used more than two of four channels (e.g.QQ Games, QQ IM, SOSO and Paipai). For further analysis, only QQ experienced users who had more experiences in QQ's diversified channels (*n* = 216, 76%) were selected among the total sample in order to extract their engagement in QQ. They were primarily females (*n* = 118, 54.6%), 21.09 years old, and not currently working (*n* = 114, 52.8%). They were juniors (*n* = 65, 30.1%) and majoring in art and science (*n* = 76, 35.2%). The majority of them logged in to QQ nearly every day (*n* = 186, 86.1%) and spent more than 6 hours on QQ (*n* = 91, 42.1%) daily. See Table 6.

These findings regarding the QQ experienced user characteristics were consistent with two defined segments of China's digital consumers – "digital junkies" and "gamers" (Lau, Lin, He, Narasimhan, & Atsmon, 2011, P10). They are the "heavy users," spending more than 28 hours on digital media weekly, consuming and producing digital content such as games and information (Lau et al., 2011).

Table 6

Demographic Characteristics of the Respondents (N = 284).

Variables	Total Sample		Experienced user	
	Frequency	Percent	Frequency	Percent
Gender				
Male	110	38.7	85	39.4
Female	157	55.3	118	54.6
Age				
15-20	104	36.6	85	39.4
21-25	171	60.2	125	57.8
26-30	6	2.1	6	2.8
Major				
Public Management	26	9.2	19	8.8
Business	40	14.1	27	12.5
Art and science	80	28.2	76	35.2
Music	1	.4	1	.5
Technology and Engineering	68	23.9	27	12.5
Other	33	11.6	30	13.9
Level of education				
Freshman	55	19.4	36	16.7
Sophomore	19	6.7	15	6.9
Junior	85	29.9	65	30.1
Senior	77	27.1	57	26.4
Master's	7	2.5	6	2.8
Ph.D	0	0	0	0
Employment Status				
Part-time job	69	24.3	51	23.6
Full-time job	41	14.4	30	13.9
Not currently working	139	48.9	114	52.8
Other	30	10.6	21	9.7
QQ ownership				
Yes	284	100	216	100
No	0	0	0	0
QQ logging in past two weeks				
None	2	.7	0	0
1-3 times	9	3.2	6	2.8
4-6 times	9	3.2	7	3.2
7-9 times	19	6.7	17	7.9
Nearly every day	245	86.3	186	86.1
Time spent on QQ				
None	0	0	0	0
Less than 1 hour	16	5.6	14	6.5
1-3 hours	98	34.5	74	34.3
4-6 hours	50	17.6	37	17.1
More than 6 hours	120	42.3	91	42.1

Statistical Analysis

A varied number of tests were utilized, including frequency distribution, descriptive statistics, paired-sample *t*-tests, factor analyses, and multiple regression analyses using Statistical Package for Social Science® (SPSS) version 17.0 (SPSS Inc., Chicago, http://www.spss.com) for Windows® operating system (Microsoft Corporation, Redman, WA, http://www.microsoft.com). The descriptive statistics indicate channel experience and actual purchase experience in terms of mean values. The paired-sample *t*-test compares purchase motivations between users of QQ Games and QQ Paipai channel. To examine the underlying dimensions of the variables, the principal component factor analysis was conducted. To test the hypothesized relationships, multiple regression analysis was employed.

The multi-item scales were subjected to a series of principal component factor analyses with varimax rotations to identify the underlying dimensions of relational social capital, virtual engagement, and purchase intention. In order for identifying the common factor structure, three channels' (i.e. QQ Games, QQ IM, SOSO) relational social capital was combined and then averaged as mean score. Because of low loadings (below 0.50) or cross-loadings, three items were excluded from the engagement scale. Besides, one item with cross-loadings was retained and included into relational social capital's sub-dimension. The results reveal three dimensions for the relational social capital variable and three dimensions for the virtual engagement variable. The initial exploratory factor analysis of purchase intention revealed a uni-dimension, which reflected that each item was internally consistent with the core issue of purchase intention. To further specify the influences of relational social capital and virtual

engagement on purchase intention, the product was categorized into virtual products and tangible products. To increase construct reliability, one item was excluded from the purchase intention scale.

The purpose of measuring reliability is to ensure that each indicator confirms the fact it is intended to confirm (Sharma, 1996). To measure the internal reliability, coefficient alpha is evaluated to determine agreement on the nominal scales (Cohen, 1960). Cronbach's alpha (α) was calculated to confirm the construct reliability and internal validity of the scales for relational social capital, virtual engagement, and purchase intention. Validity is another critical part that ensures the quality of the interpretations derived from the collected data (Vogt, 1999). Overall, the scales were internally consistent and able to distinguish between constructs and were adequate indicators of the theoretical constructs.

To test the hypothesized relationships of H1 through H7, multiple regression analysis using regression scores was conducted by employing the enter method. The purpose of multiple regression is to determine the significant influence of several independent variables on a dependent variable. Relational social capital and virtual engagement are multidimensional concepts; thus, this study employed multiple regression to demonstrate the proposed relationships among them. The coefficients are estimates of the effect that the independent variables have on the dependent variable. As a measure of the effect of the other predictor variables on a regression coefficient, the variance inflation factor (VIF) was calculated to check the multicollinearity. All VIFs were acceptable with a value of 1, indicating that the multicollinearity was not affected.

Data Analysis

Virtual Behaviors in QQ

The descriptive data regarding QQ users' behaviors show general physiological features relative to online purchasing. Specifically, the experienced users were revealed to use QQ IM most frequently (*M* = 4.36, *SD*=.968), followed by QQ Games (*M* = 3.53, *SD* = .695). They also were indicated to have a lower frequency level of usage of Paipai (*M* = 2.38, *SD* = 1.085) and SOSO (*M* = 2.26, *SD* = 1.047). As purchase outcomes, the experienced users intended to purchase virtual products more at QQ Games (*M* =2.79, *SD* = .893) than at Paipai (*M* = 2.10, *SD* = 1.023). The monthly expenses on Paipai was determined (*M* = 1.60, *SD* = .823). See Table 7. In the previous month, the sample was reported to purchase 1.98 avatars from QQ Games, while they spent RMB 5.53 ($ 0.86) on purchasing Q-coins from QQ Games on average. An average value of Q-coins of RMB 4.34 ($ 0.68) was purchased from Paipai. Furthermore, the amount of purchased virtual products was shown to be greater than that of tangible products. On average, the selected sample consumed 9.61 virtual items. See Table 8.

Table 7

QQ Active Users' Channel Experience and Actual Purchasing Experience

	M	Std. Deviation
Frequency of QQ Games	3.53	.695
Frequency of QQ IM	4.36	.968
Frequency of SOSO	2.26	1.047
Frequency of Paipai	2.38	1.085
Purchase at QQ Games	2.79	.893
Purchase at Paipai	2.10	1.023
Money spent at Paipai	1.60	.823

Note: M = Mean

Table 8

Product Purchased in the Previous Month

	Mean
Avatars purchased from QQ Games	1.98
Q-coins purchased from QQ Games	5.53 RMB ($0.86)
Q-coins purchased from Paipai	4.34 RMB ($0.68)
Product Category	
Books	0.23
Movies,Music & Games	0.06
Electronics & Computer	0.06
Home, Garden & Tools	0.02
Grocery, Health & Beauty	0.125
Clothing, Shoes & Jewelry	0.14
Sports & Outdoors	0.20
Virtual items	9.61

Note: M = Mean

Purchase Motivation

The functional perceptions of QQ Games and Paipai as purchase motivations were another distinction. The experienced users indicated a perception that QQ Games has less functional purchase motivation than Paipai has by answering the following questions: “It would improve my shopping productivity,” “It would enhance my effectiveness in shopping,” “It would be useful in buying what I want” and “It would improve my shopping ability.” QQ Games was less likely to improve consumers’ shopping productivity than Paipai (*M* = 2.96/3.19, *t* = -3.334, *p* <.01). In QQ Games, consumers’ shopping effectiveness would be enhanced less than in Paipai (*M* = 2.99/3.25, *t* = -4.148, *p* <.001). Generally, the selected sample considered QQ Games to be less useful in buying products than Paipai (*M* = 3.12/3.33, *t* = -3.31, *p* < .01). Meanwhile, shopping ability was less likely to be improved in QQ Games than in Paipai (*M* = 3.02/3.21, *t* = -2.913, *p* < .01). There was no significant difference in hedonic

motivation perceptions between QQ Games and Paipai. The comparison between QQ Games and Paipai is presented in Table 9.

Table 9

Paired-Sample t-test: Purchase Motivation

	QQ Games M	QQ Paipai M	t
It would improve my shopping productivity.	2.96	3.19	-3.334**
It would enhance my effectiveness in shopping.	2.99	3.25	-4.148***
It would be useful in buying what I want to shop	3.12	3.33	-3.310**
It would improve my shopping ability.	3.02	3.21	-2.913**

Note: *M* = Mean; *$p < .05$, **$p < .01$; ***$p < .001$; n/s: not significant

Identification of Underlying Dimensions: Factor Analysis

A series of principal component factor analyses demonstrated the underlying dimensions of relational social capital as trust, identification, and norm of reciprocity. Virtual engagement was identified with information seeking, knowledge creation, and shared interactions. Purchase intention consisted of virtual product purchase intention and tangible product purchase intention. Results of the factor analysis with the calculated Cronbach's alpha scores are presented in Table 10.

Relational Social Capital

Consistent with the literature (Chiu et al., 2006) regarding social capital measure and based on item meanings, the factor analysis for relational social capital indicated dimensions labeled as trust, identification, and norm of reciprocity. Scale reliabilities were acceptable, with scores ranging from .696 to .877.

The first factor, named Trust (α = .842, explained 22.548% of variance) contained seven items related to the feature of trust in QQ. The factor included items

such as “will keep the promises,” “would not consciously do anything to disrupt the conversation,” “truthful in dealing with one another,” and “behave in a consistent manner.” The second factor, identified as Identification (α = .696, explained 21.709% of variance), included five items related to the feature of social identify in QQ. This factor contained items such as “proud to be a member,” “a valuable member,” “a sense of closeness” and “a positive feeling.” As the third factor, Norm of Reciprocity (α = .877, explained16.11% of variance) contained three items related to the feature of reciprocity in QQ. This factor included items such as “would help if I needed it,” “would help me if I were in a similar situation,” and “will help me, so it’s only fair to help others.”

The mean score of each sub-dimension indicated that the respondents regarded norm of reciprocity (*M* = 3.43) as the most commonly relational aspect in social capital, followed by trust (*M* = 3.4), and identification (*M* = 3.33).

Table 10

Factor Analysis of Relational Social Capital

Factor	Scale items	F.L[a]	E.V.	a[c]
Trust	People in QQ will keep the promises they make to one another.	.791	22.548	.842
	People in QQ would not consciously do anything to disrupt the conversation.	.780		
	People in QQ are truthful in dealing with one another.	.743		
	People in QQ behave in a consistent manner.	.644		
	People in QQ will not take advantage of others even when the opportunity arises.	.577		
	People in QQ will do everything within their capacity to help others.	.539		
	Most people are honest.	.494		
Identification	I am proud to be a member.	.840	21.709	.696
	I am a valuable member.	.796		
	I have a sense of closeness.	.746		
	I have a positive feeling.	.680		
	I have a sense of belonging.	.645		
Norm of Reciprocity	People in QQ would help me if I need it.	.723	16.110	.877
	People in QQ would help me if I were in a similar situation.	.700		
	People in QQ will help me, so it's only fair to help others.	.599		

N=216; Scale range: 1 = *strongly disagree*; 5 = *strongly agree*; [a]Factor loading; [b]Explained variance; [c]Cronbach's α

Virtual Engagement

The factor analysis for Engagement revealed three dimensions classified as Information Seeking, Knowledge Creation, and Shared Interactions consistent with the literature (Humphreys & Grayson, 2008; Koh et al., 2007). Cronbach's alphas were acceptable, with ranges from .736 to .836. All factor items with their factor loadings are presented in Table 11.

Table 11

Factor Analysis of Virtual Engagement

Factor	Scale items	F.L[a]	E.V.	a[c]
Information seeking	The information I get is up-to-date.	.816	21.07	.833
	The information is easily access.	.775		
	The information I get is helpful to improve my capabilities.	.717		
	The information I get is specific.	.650		
	The information I get is relevant to people I am interest in.	.609		
	The information I get is not available elsewhere.	.575		
Knowledge creation	The knowledge I created is accurate.	.802	17.634	.836
	The knowledge I created is reliable.	.745		
	The knowledge I created is complete.	.728		
	The knowledge I created is easy to understand.	.654		
	The knowledge I created is timely.	.483		
Shared interactions	The interaction shared with others is an enjoyable experience.	.723	15.489	.736
	The interaction shared with others is good.	.714		
	The interaction shared with others is a wise move.	.680		
	The interaction shared with others is valuable to me.	.655		
	The interaction shared with others is harmful.	.572		

N = 216; Scale range: 1 = *strongly disagree*; 5 = *strongly agree*; [a]Factor loading; [b]Explained variance; [c]Cronbach's α

Information Seeking (α = .833, explained 21.07% of variance) was identified as the first factor, including six items related to users' information-oriented engagement in QQ. This factor contained items such as "the information I get is up-to-date," "the information is easily accessed," "the information is helpful to improve my capabilities" and "the information I get is specific."

As the second factor, Knowledge Creation (α = .836, explained 17.634% of variance) contained five items related to users' knowledge-oriented engagement in QQ. This factor identified items such as "the knowledge I created is accurate," "the knowledge I created is reliable," "the knowledge I created is complete," and "the knowledge I created is easy to understand."

The third factor, identified as Shared Interactions (α = .736, explained 15.489% of variance) included items related to users' interactions-oriented engagement in QQ. This factor contained items such as "the interaction shared with others is an enjoyable experience," "the interaction shared with others is good," "the interaction shared with others is a wise move," and "the interaction shared with others is valuable to me."

The mean score of each sub-dimension indicated that the respondents regarded shared interactions (*M* = 3.8) as the most important factor, followed by knowledge creation (*M* = 3.38) and information seeking (*M* = 3.24).

Purchase Intention

The factor analysis for purchase intention was a uni-dimension with explained 46.16 % of variance. To measure purchase intention, two product categories were defined as virtual product and tangible product. Thus, based on current product categories in QQ, two aspects of purchase intention were tested. The first purchase

intention, named Virtual Product Purchase Intention (α = .805), contained six items related to users' intention of virtual product purchase. This factor included items such as "intend to transact with Q-coins in the future," "recommend others to buy Q-coins from QQ Games," "intend to buy avatars from QQ Games," and "recommend others to buy virtual items from Paipai."

The second purchase intention was identified as Tangible Product Purchase Intention (α = .760). The factor included two items related to users' intention of tangible product purchase. The items were included "intend to buy tangible products from Paipai" and "would consider purchasing tangible products from Paipai in the future." See Table 12.

Table 12

Factor Analysis of Purchase Intention

Factor	Scale items	E.V.	α
Virtual product	In QQ Games, I intend to transact with Q-coins in the future.	46.16	.805
	I recommend others to buy Q-coins from QQ Games.		
	I intend to buy avatars from QQ Games.		
	I recommend others to buy avatars from QQ Games.		
	I intend to buy virtual items (Q-coins, gaming cards, etc.) from Paipai.		
	I recommend others to buy virtual items from Paipai.		
Tangible product	I intend to buy tangible products from Paipai.		.760
	I would consider purchasing tangible products from Paipai in the future.		

N = 216; Scale range: 1 = *strongly disagree*; 5 = *strongly agree*; [c]Cronbach's α

Testing Hypotheses: Multiple Regression

To examine the hypothesized relationships of H1 through H7, multiple regression analyses were conducted using the enter method, and this confirmed all of the independent variables in the model at the same time. Overall, 15 out of the 21 proposed relationships were significant (see Table 13).

The testing of Hypothesis 1 showed that three relational social capital factors significantly impacted purchase intention of virtual products. The three relational social capital dimensions were the predictor variables, and the virtual product purchase intention was the criterion variable. The regression model significantly explained experienced QQ's users' purchase intention of tangible products [F= 16.686, p <.001, R^2 = .191]. Trust (β = .176, p < .01), identification (β = .328, p < .001), and norm of reciprocity (β = .228, p < .001) significantly affected virtual product purchase intention. Hence, H1a, H1b, and H1c were accepted (See Figure 2 and Table13).

Hypothesis 2 tested three relational social capital factors which were shown to significantly impact purchase intention of tangible products. The three relational social capital dimensions were the predictor variables, and the tangible product purchase intention was the criterion variable. The regression model significantly explained experienced QQ's users' purchase intention of tangible product [F = 13.663, p <.001, R^2 = .162]. Trust (β = .148, p < .05), identification (β = .322, p < .001), and norm of reciprocity (β = .190, p < .01) significantly affected tangible product purchase intention. Hence, H2a, H2b, and H2c were accepted (See Figure 3 and Table 13).

Based on the testing of Hypothesis 1 and 2, relational social capital significantly impacts purchase intention, regardless of product category. Thus, trust, identification, and norm of reciprocity are determinant drivers of purchase intention.

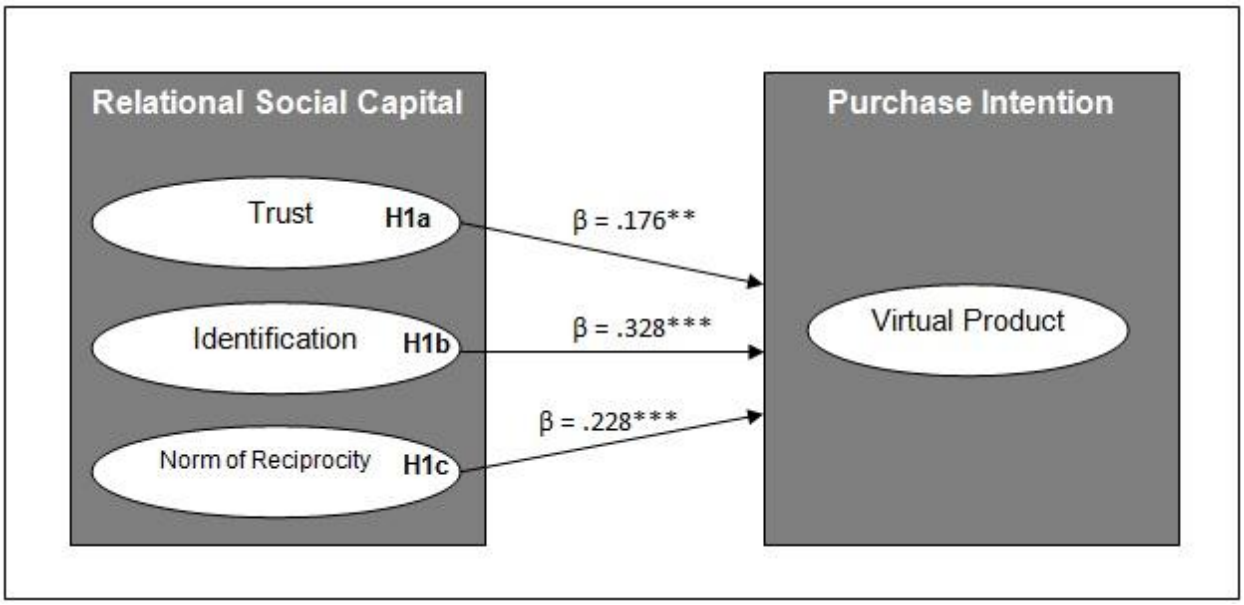

Figure 2. Hypothesis 1 result: relational social capital and virtual product purchase intention.
**p < .01; ***p < .001; ⟶ hypothesis accepted; - - - - ▸ hypothesis rejected.

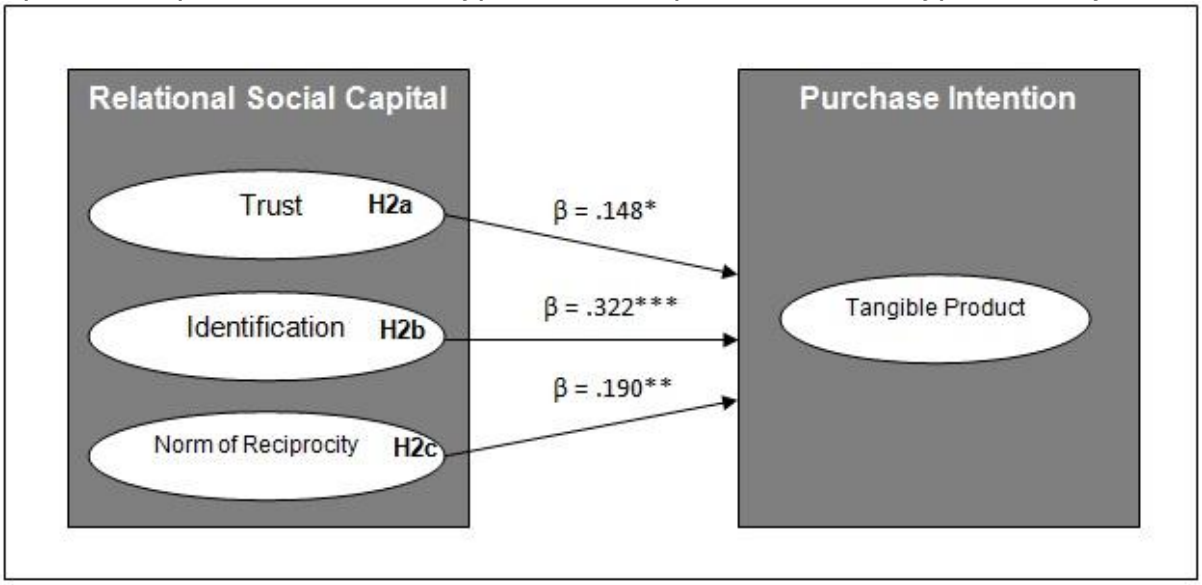

Figure 3. Hypothesis 2 result: Relational social capital and tangible product purchase intention.
*p < .05;**p < .01; ***p < .001; ⟶ hypothesis accepted; - - - - ▸ hypothesis rejected.

Hypothesis 3 predicted a significant effect of relational social capital on information seeking. The proposed relationship between relational social capital and

information seeking was supported [*F*= 10.537, *p* <.001, R^2 = .130]. Identification (β = .147, p < .05) and norm of reciprocity (β = .329, p < .001) positively impacted information seeking. Thus, H3b and H3c were accepted (see Figure 4 and Table 13). Based on the testing of Hypothesis 3, identification and norm of reciprocity are two significant predictors of QQ users' information seeking engagement.

Hypothesis 4, proposing significant relationships between relational social capital and knowledge creation, was supported [F= 17.726, p <.001, R^2 = .201]. Trust (β = .265, p < .001), identification (β = .292, p < .001), and norm of reciprocity (β = .212, p < .01) were positively related to knowledge creation. Hence, H4a, H4b, and H4c were accepted (see Figure 5 and Table 1). Based on the testing of Hypothesis 4, three dimensions of relational social capital are determinant factors to increase QQ users' knowledge creation engagement.

The testing of Hypothesis 5 found significant relationships between relational social capital and shared interactions [F= 4.429, p <.01, R^2 = .059]. Trust (β = .171, p < .05) had a positive impact on knowledge creation. Thus, H5a was accepted (see Figure 6 and Table 13). According to the results of the testing of Hypothesis 5, trust is a driver to enhance QQ users' shared interactions.

In Hypothesis 6, three virtual engagement dimensions were identified to predict the purchase intention of virtual products, and significant relationships were found [*F*= 15.843, *p* <.001, R^2 = .183]. Information seeking (β = .150, p < .05) and knowledge creation (β = .400, p < .001) were demonstrated to positively influence virtual product purchase intention. Therefore, H6a and H6b were accepted (see Figure 7 and Table

13). According to the testing of Hypothesis 6, engagement including information seeking and knowledge creation is a predictor of virtual product purchase intention in QQ.

Hypothesis 7 proposed relationships between virtual engagement and purchase intention of tangible product [F= 8.154, p <.001, R^2 = .103]. Knowledge creation (β = .288, p < .001) was positively related to tangible product purchase intention. Thus, only H7b was accepted (see Figure 8 and Table 13). According to Hypothesis 7, knowledge creation engagement is a determinant factor to increase tangible product purchase intention in QQ.

Among 21 tested hypotheses, six hypotheses, namely H3a, H5b, H5c, H6c, H7a, and H7c, were rejected. The results might have been caused due to the fact that specific relational capital existed in each channel, while virtual engagement was measured in the general virtual context. For instance, the result of testing Hypothesis 3a was that trust has no impact on information seeking. Users in SOSO seldom perceive trust because they are engaged in information search rather than relational resources. The result of testing of Hypothesis 5 was that identification and norm of reciprocity have no influences on shared interactions. Reciprocal norm is hardly perceived in QQ Games because users are likely to enjoy the gaming experience rather than help others with higher expectation of getting repayment in the future. Lacking relational resources, SOSO is less likely to identify its users in a social structure.

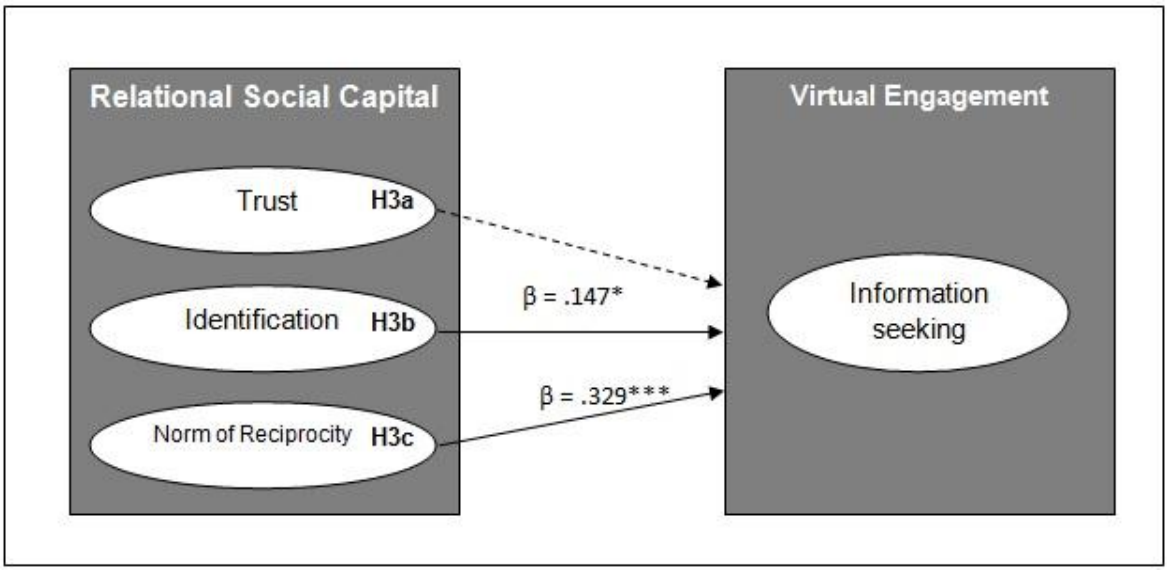

Figure 4 .Hypothesis 3 result: relational social capital and information seeking
*p < .05; ***p < .001; ⟶ hypothesis accepted; - - - - ▸ hypothesis rejected.

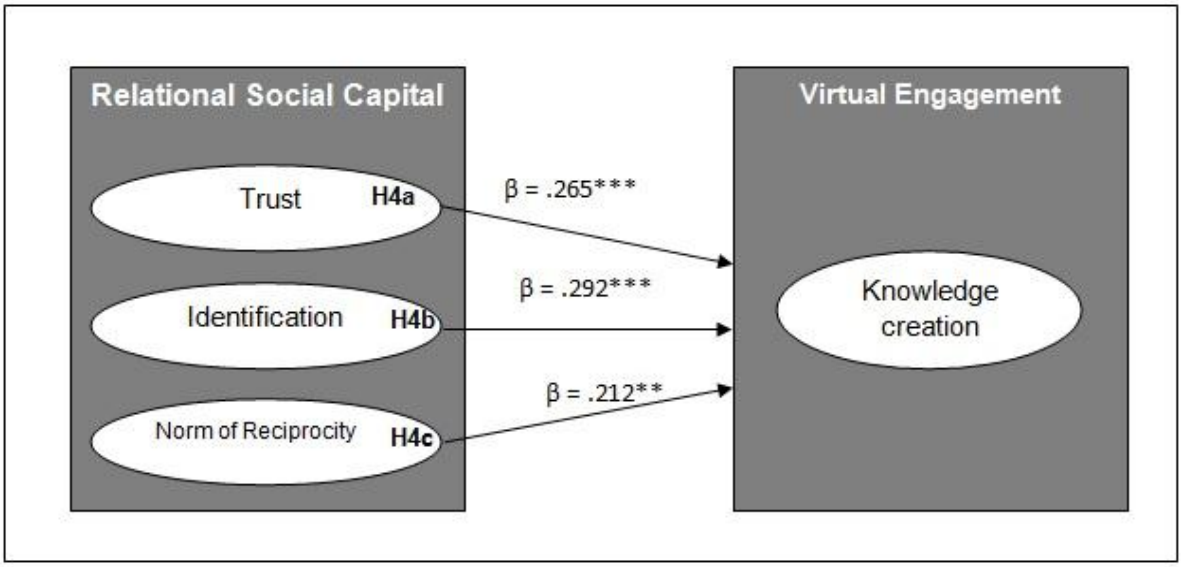

Figure 5 .Hypothesis 4 result: relational social capital and knowledge creation
**p < .01; ***p < .001; ⟶ hypothesis accepted;- - - - ▸ hypothesis rejected.

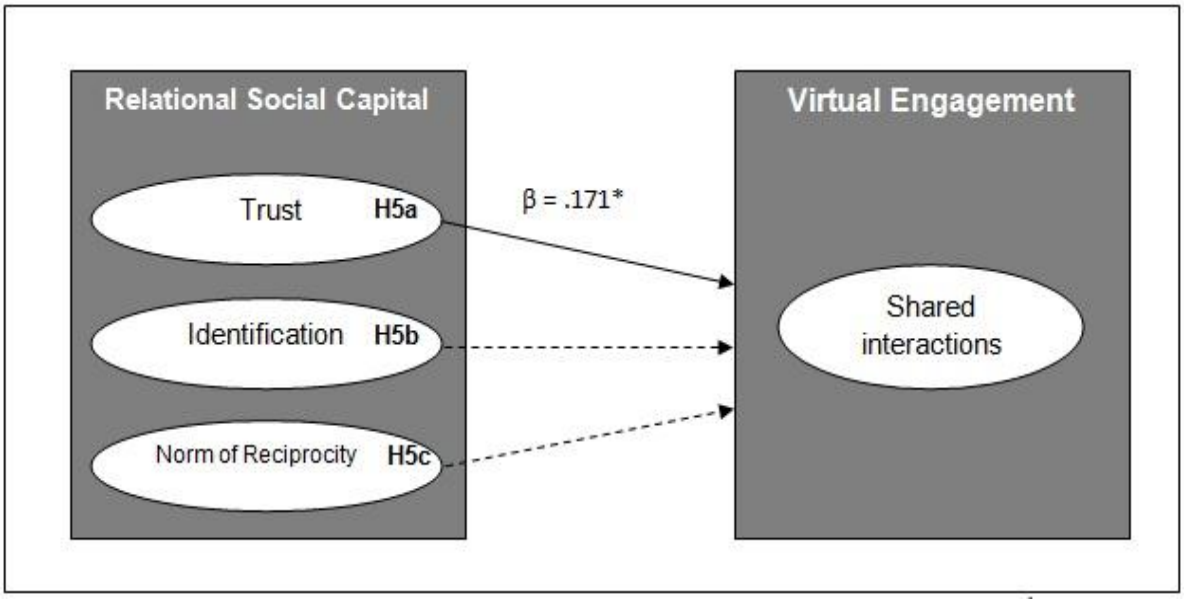

Figure 6 .Hypothesis 5 result: relational social capital and shared interactions
**p < .01; ⟶ hypothesis accepted; - - - - ▸ hypothesis rejected.

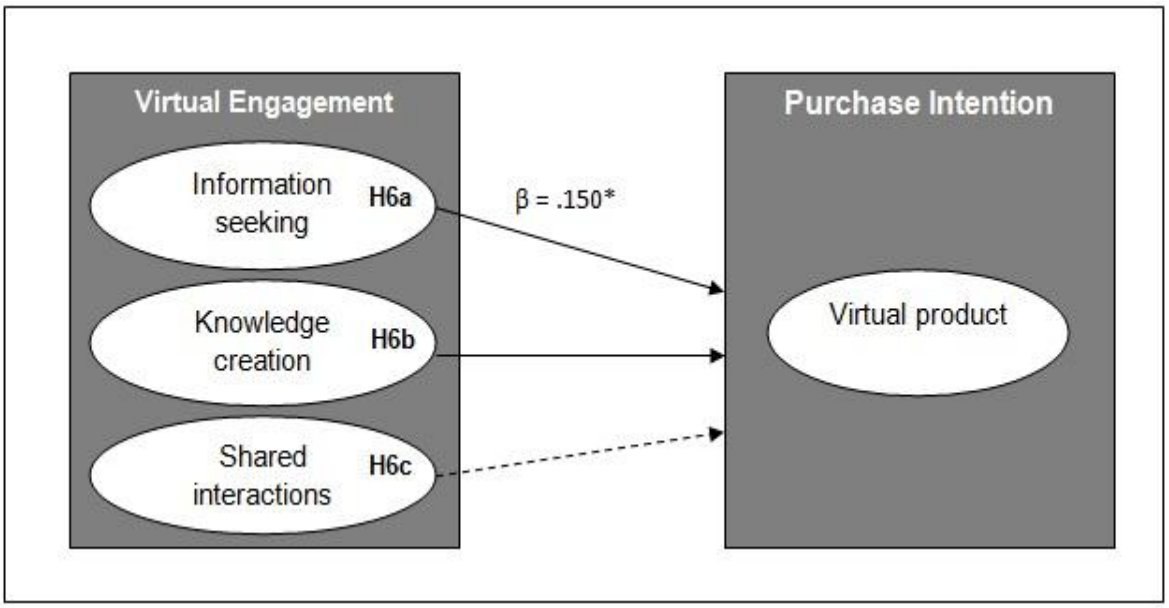

Figure 7 .Hypothesis 6 result: virtual engagement and virtual product purchase intention
*p < .05; ***p < .001; ⟶ hypothesis accepted; - - - - ▸ hypothesis rejected.

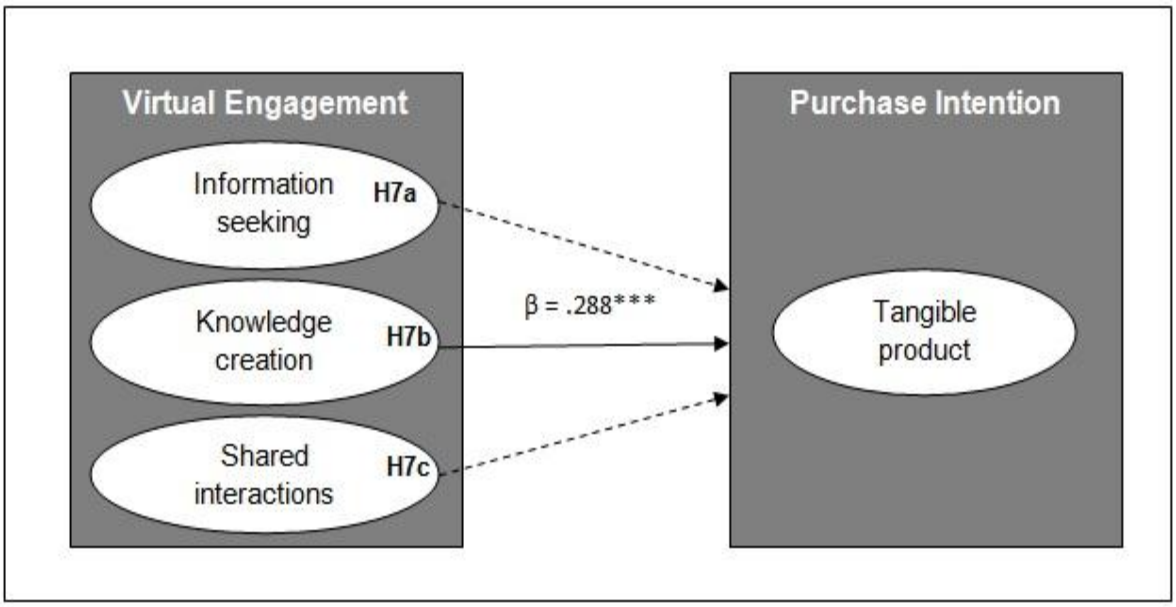

Figure 8 .Hypothesis 7 result: virtual engagement and tangible product purchase intention

***p < .001; ⟶ hypothesis accepted; - - - ▸ hypothesis rejected.

Table 13.

Multiple Regression between Relational Social Capital, Virtual Engagement, and Purchase intention

		Dependent variables (Standardized beta coefficient)				
Predictor variables		Virtual engagement			Purchase intention	
		Information seeking	Knowledge creation	Shared interactions	Virtual product	Tangible product
Relational social capital	Trust	n/s	.265***	.171*	.176**	.148*
	Identification	.147*	.292***	n/s	.328***	.322***
	Norm of Reciprocity	.329***	.212**	n/s	.228***	.190**
	R^2	.130	.201	.059	.191	.162
	Adjusted R^2	.117	.189	.046	.180	.150
	F	10.537***	17.726***	4.429**	16.686***	13.663***
Virtual engagement	Information seeking				.150*	n/s
	Knowledge creation				.400***	.288***
	Shared interactions				n/s	n/s
	R^2				.183	.103
	Adjusted R^2				.172	.091
	F				15.843***	8.154***

*p< .05, **p< .01; ***p< .001; n/s: not significant

CHAPTER 5

DISCUSSION AND IMPLICATIONS

The study examines the transformation of relational social capital into purchase intention along with virtual engagements in QQ. Specifically, it delineates inclusive demographic and virtual behavioral characteristics among QQ users and identifies three relational social capital dimensions and three virtual engagement dimensions. In addition, the positive relationships among relational social capital, virtual engagement, and purchase intention are recognized, which entails the transformation of relational social capitals into purchase intention. If trust, identification, and norm of reciprocity facilitate QQ users' virtual engagements of information sharing and knowledge creation, then purchase intention is predicted by this investigation in QQ.

Providing virtual behavior features, QQ's users engage in QQ IM most frequently, followed by QQ Games, Paipai, and SOSO. Interestingly, the users are more likely to purchase virtual products at QQ Games than at Paipai. A recent research (Lau et al., 2011) supports this finding in that heavy users of China digital media are digital junkies and gamers who consume and produce intensively digital content containing "video, music, games, and information" (p.10). The functional purchase motivations were distinct in QQ Games and Paipai. Consumers perceive Paipai as integrated with features that improve shopping productivity, effectiveness, usefulness and shopping ability. Researchers (Cova, 1997; Mathwick et al., 2008) suggest that these features as utilitarian virtual settings are enriched to complement community-based consumption and are also the instrumental aims of social networks.

This study identifies the underlying dimensions of relational social capital and virtual engagement in the QQ context. Trust, identification, and norm of reciprocity are identified as three dimensions of relational social capital. Information seeking, knowledge creation, and shared interactions are recognized as the virtual engagement dimensions. Based on this identification of dimensions, 15 out of 21 hypotheses corroborate the positive impacts of relational social capital and virtual engagement on product purchase intention. Trust, identification, and norm of reciprocity encourage both virtual product purchase intention and tangible product purchase intention directly or indirectly. Most prominently, QQ users' information seeking and knowledge creation engagements are predictors of virtual product purchase intention, while the knowledge creation engagement plays a pivotal role in promoting the tangible product purchase intention.

Based on these findings, first, this study concludes that relational social capital has significant direct effects on purchase intention. Trust, identification, and norm of reciprocity are critical antecedents to predict virtual and tangible product purchase intentions in QQ. Meanwhile, it should be noted that identification has primary influence on both kinds of product purchase intentions. This illustrates that consumers' perceptions of identification in QQ is the most vital driver in product purchasing. This is consistent with Bergami and Bagozzi's (2000) observation that identification motivates consumers so as to foster their loyal behaviors. It seems that identification might lead to repeated purchases in conjunction with consumer loyalty. The direct effect of relational social capital on purchase intention might be due to the emergence of shared interests regarding consumption. The direct transformation from relational rationality to

transactional rationality has been explored in the general social structure (Lin, 2001). This is consistent with the findings about the economic potential of virtual communities. Either the community-level intangible economic leverage or individuals' purchase behaviors are driven by relational resources embedded in the networks (Balasubramanian & Mahajan, 2001; Mathwick et al., 2008). While Putnam (1993) suggests the value cooperative economic behavior is partially attributed to social capital, the contribution of social capital to economic success is profound and needs further investigation. For instance, Lu et al. (2010) specify trust as trust in the electronic environment and trust in members, indicating that trust in the environment drives purchase intention, while trust in members encourages repeated purchases. This suggests that investing in interactive and connective networks that stimulate development of social capital may entice QQ users to eventually make product purchases. Similarly, a virtual social network with highly utilized and integrated relational social capital may lead to economic profit.

Second, the relational social capital in the QQ community leads to diverse virtual engagements of QQ users as follows: identification and norm of reciprocity drive information seeking engagement; trust, identification, and norm of reciprocity drive knowledge creation engagement; and only trust drives shared interaction engagement. Interactions in form of information exchanged are continuously strengthened by trust, and trust takes a basic role in building relationships (Blanchard & Horan, 2000). Surprisingly, because of reciprocity, the community participants have more positive attitudes towards knowledge flow (Bock et al., 2005). Analogously, information seeking engagement might result from the confidence built by the reciprocal norm. Borgatti &

Cross (2003) indicate that information seeking is based on individual perception of others' expertise. Hence, identification resulting in awareness of community membership is likely to encourage information seeking (Dholakia et al., 2004).

Third, virtual engagement leads to virtual product purchase intention as well as to tangible product purchase intention. The virtual product purchase intention is positively affected by information seeking and knowledge creation, while only knowledge creation engagement impacts tangible product purchase intention. Thus, knowledge creation engagement is the key driver to trigger purchase intention in QQ. It is consistent with Lau et al.'s (2011) identification of China's digital heavy users. They are digital content-centered consumers active in product consumption and digital content production. Further, knowledge creation, as an aspect of "prosumption," enables consumers to take part in production and consumption collaboratively (Beer & Burrows, 2010; Humphreys & Grayson, 2008; Ritzer & Jurgenson, 2010).

Interactive information seeking such as "third-party" information searching and online decision aid assistantship improve the ability of consumers in a shopping environment to receive product information and therefore to make purchases (Haubl & Trifts, 2000; Schlosser, 2003; Wang et al., 2002). Besides, consumers contribute cooperative values to products and to the virtual community, which form a new trend of production and consumption (Rizter & Jurgenson, 2010). The intersecting roles of consumer and producer give consumers more options to choose what kinds of products they like (Beer & Burrows, 2010; Humphreys & Grayson, 2008; Ritzer & Jurgenson, 2010). Interestingly, focusing mainly on interactional functions, QQ's relative features providing shared interactions hardly motivate consumers to purchase. This finding is

consistent with Humphreys & Grayson's (2008) observation that prosumers represent "a fundamental change in exchange roles or organization." This suggests that consumers might not be merely satisfied with relationships involved in the virtual community; they might expect and embark on a new form of exchange such as that of knowledge.

The current study has implications for managerial practices and marketing strategies to QQ. On the one hand, an engaging competitive environment with emphasis on information search and knowledge creation appears to encourage consumers to purchase products in QQ. To attract and retain customers, e-marketers could incorporate more interfaces focusing on exchanges, amplifying product information and consumption knowledge circulation in the virtual context. For example, Google has launched *Google Instant*, which attaches brands to first-letter keywords of every query (Learmonth, 2010). This new type of information search also increases advertisement impressions by providing product and brand options (Learmonth, 2010). The similar information search function might be incorporated in QQ and other virtual contexts, which would improve consumers' capabilities of searching for product information. Additionally, some features in the virtual context such as "liking" and "sharing" might encourage consumers' knowledge creation. On the other hand, utilizing social capital phenomenon to its fullest potential becomes crucial. It implies potential opportunities for e-marketers, such as increasing QQ users' identification in the community. Further, online retail web sites with helpful reviews generate potential value to customers which therefore increase potential purchases (Mudambi & Schuff, 2010). This might increase consumers' trust towards others and towards the whole shopping environment. In current research, relational social capital involved in multiple channels

is suggested to have the potential of being transferred. Multi-channel retailers might optimize relational social capital in one channel to strengthen consumers' trust, identification, and reciprocal norm in another channel by offering similar social activities. The recent social commerce such as Groupon, offering social shopping experiences, could further optimize social actions in order to encourage repeated purchases. Specifically, a feature of customer reviews may increase consumers' trust in products.

Finally, this research speculated that virtual product purchase intention and tangible product purchase intention can be stimulated when a user engages in QQ as a result of the existence of social relationships. Based on the hypothesized relationships among relational social capital, virtual engagements, and product purchase intention, the mediating role of virtual engagement can be surmised to explore the capital in a virtual community context. Results indicate that relational social capital positively affects virtual engagement. Virtual engagement, in turn, exerts an influence on purchase intention. The study suggests which engagement dimensions might mediate capital as well. The dichotomy of purchase intention and the drivers behind each category identified by this research are relevant for e-marketers. As virtual engagement directs purchase intention, the engagement constructs can be employed to amply mediate financial potential involved in the virtual community, in terms of the extent to which they deliver these two types purchase intention of different product categories.

Given the current literature relating to social capital and virtual engagement, these findings provide a theoretical and empirical foundation that serves as a holistic approach to understanding capital and engagement in the context of virtual community.

CHAPTER 6

LIMITATIONS AND FUTURE RESEARCH RECOMMENDATIONS

With the empirical validation of many of its hypotheses, the current study provides a comprehensive platform for further analysis of social capital and virtual engagements. However, given the exploratory nature of this approach, there are some limitations in generalizing these findings. First, the purposive sampling limits the generalization of the research by restricting the number of experienced QQ users incorporated in the study. The sampling may not be representative of the whole population of QQ users because some members of the population had no chance of being sampled. There are seven segments of digital consumers in China with the age range from 18 years old to 34 years old (Lau et al., 2011). The sample is 23 years old on average. A sampling of QQ users with varied demographic characteristics (e.g. age, job status, and income) may lead to different results. Thus, in order to represent a more completely generalized population, the survey can be conducted among participants at different levels of age or socio-economic status.

Second, the relational dimension of social capital (i.e., trust, identification and norm of reciprocity) is adopted in this study. However, more elaborate social capital dimensionality may better capture the multifaceted relationship resources involved in the virtual community (Chiu et al., 2006; Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998; Wasko & Faraj, 2005). Based on the dimensionality of social capital explored in previous research, future studies may investigate the effects of multidimensional social capital on virtual engagement and purchase outcomes.

Albeit that engagement is comprised of emotional and behavioral aspects, the present study focuses only on information seeking, knowledge creation, and shared interactions in order to capture users' engagement in QQ. Other affective dimensions of engagement might be driven by social capital and also drive individual's purchase intention. Further research can specify emotional and behavioral engagement to better understand individuals' commitment to the virtual community.

Fourth, the present study uses only QQ as a case to explore capital and engagement. The holistic concept of social capital and virtual engagement is needed to extend our comprehension beyond the present research. Cultural and case specific discrepancies need to be considered when other virtual contexts are studied. Varied perceptions of social capital and engagement might be captured in the general community-based virtual environment. Thus, future research can explore social capital and virtual engagement in greater depth by employing the general concept of virtual community. Alternatively, the social capital and engagement can be further examined in social media with different cultures, such as Facebook or Twitter.

Beyond these limitations, given the research model presented here as the foundation, there are various directions for future research. First, both relational social capital and virtual engagement could be tested at a multi-channel level. Further research focusing on differences of social capital and engagement among channels may yield insights on relational resource transferring and activity exchanges. The present study addresses individuals' purchase intention as it is affected by relational social capital and virtual engagement. Future studies may give insights into the transactional capital from companies' perspectives. Also, the present study focuses on

QQ as a virtual community. Future studies that explore social capital and engagement in the general virtual context may insightfully portray relationship resources and personal commitment towards the virtual environment. Also, by comparing two different community platforms (e.g., online vs. offline), future research may provide valuable insights into capital and engagement involved in a community-based environment. Finally, future studies with the emphasis on cross-cultural comparison (e.g., Facebook vs. QQ) may provide a new scope on the relationships among relational social capital, purchase intention, and virtual engagement.

APPENDIX A

SURVEY QUESTIONNAIRE

The Control Effects of Relational Social Capitals: Transforming Attitudinal Engagements to Purchase intentions in QQ China

Dear Survey Participant,

This research study is being conducted by a graduate student of the School of Merchandising and Hospitality Management at the University of North Texas. The purpose of this study is to explicate experiences in QQ as a virtual community. The study will begin by asking your participation in QQ. The second section queries your attitudinal engagements in QQ. The survey then asks your personal perceptions and perceptions of other people in QQ based on three QQ channels. The following two sections are related to your purchase motivation and intention in QQ games and Paipai. The conclusion of the survey asks a few general demographic questions.

The survey asks your opinions and perceptions about experiences in QQ. It will take you approximately 10 to 15 minutes to complete this survey. It also asks a few questions about you to obtain demographic information relevant and important to the study. However, the survey collects no personally identifiable data. The researcher will keep your identity and individual responses absolutely confidential and anonymous.

Your participation is voluntary and you have the right to decline to participate or to withdraw during the course of the study. There are no foreseeable risks involved with this study. Your decision whether to participate or withdraw will have no effect on your grade in this course. Your participation is helpful and may advance research in the fashion merchandising field. Your response and those of other participants should provide a valuable insight into relational social capital and virtual engagement in QQ that can help to enhance your experience in the community.

Please contact the principal investigator, HaeJung Kim, if you have any question and comments about this project. You may keep this letter for your records. This project has been approved by the UNT Institutional Review Board (IRB). Contact the UNT IRB at 940-565-3940 with any questions about your rights as a research subject. For any questions about this study contact:

Ran Huang, *Graduate Student*
(940)565-2275
ranhuang@my.unt.edu

Principal Investigator: HaeJung Kim, *Ph.D*
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School of Merchandising & Hospitality Management
1155 Union Circle, #311100
University of North Texas, U.S.A. 76203-5017

Transformation of relational social capital to purchase intention in virtual engagements at QQ China

1. Do you have a QQ account?

1. ( ) Yes 2. ( ) No

2. How often have you log on QQ in past two weeks?

1. None	2. 1-3 times	3. 4-6 times	4. 7-9 times	5. nearly every day

3. How long do you sign in QQ every time?

1. None	2. less than 1 hour	3. 1-3 hours	4. 4-6 hours	5. more than 6 hours

Section 1 **In QQ, I think...**

Circle the one number that best describes your perception about QQ.

	Strongly Disagree [1]	Disagree [2]	Neutral [3]	Agree [4]	Strongly Agree [5]
1. The information I get is specific.	[1]	[2]	[3]	[4]	[5]
2. The information I get is helpful to improve my capabilities.	[1]	[2]	[3]	[4]	[5]
3. The information I get is relevant to people I am interested in.	[1]	[2]	[3]	[4]	[5]
4. The information I get is up-to-date.	[1]	[2]	[3]	[4]	[5]
5. The information I get is for free.	[1]	[2]	[3]	[4]	[5]
6. The information I get is not available elsewhere.	[1]	[2]	[3]	[4]	[5]
7. The information is easily access.	[1]	[2]	[3]	[4]	[5]
8. The information I get is useful about products/services.	[1]	[2]	[3]	[4]	[5]
9. The knowledge I created is relevant to the topics.	[1]	[2]	[3]	[4]	[5]
10. The knowledge I created is easy to understand.	[1]	[2]	[3]	[4]	[5]
11. The knowledge I created is accurate.	[1]	[2]	[3]	[4]	[5]
12. The knowledge I created is complete.	[1]	[2]	[3]	[4]	[5]
13. The knowledge I created is reliable.	[1]	[2]	[3]	[4]	[5]
14. The knowledge I created is timely.	[1]	[2]	[3]	[4]	[5]
15. The interaction shared with others is good.	[1]	[2]	[3]	[4]	[5]
16. The interaction shared with others is harmful.	[1]	[2]	[3]	[4]	[5]
17. The interaction shared with others is an enjoyable experience.	[1]	[2]	[3]	[4]	[5]
18. The interaction shared with others is valuable to me.	[1]	[2]	[3]	[4]	[5]
19. The interaction shared with others is a wise move.	[1]	[2]	[3]	[4]	[5]

Section 2 **I think people in QQ ....**

Circle the one number that best describes your perception about QQ channels

	QQ Games					QQ IM					QQ SOSO				
	Strongly Disagree [1]	Disagree [2]	Neutral [3]	Agree [4]	Strongly Agree [5]	Strongly Disagree [1]	Disagree [2]	Neutral [3]	Agree [4]	Strongly Agree [5]	Strongly Disagree [1]	Disagree [2]	Neutral [3]	Agree [4]	Strongly Agree [5]
1. will not take advantage of others even when the opportunity arises.	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]
2. will keep the promises they make to one another.	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]
3. would not consciously do anything to disrupt the conversation.	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]
4. behave in a consistent manner.	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]
5. are truthful in dealing with one another.	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]
6. will do everything within their capacity to help others.	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]
7. most people are honest.	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]
8. will help me, so it's only fair to help others.	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]
9. would help me if I need it.	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]
10. would help me if I were in a similar situation.	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]
11. I have a sense of belonging.	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]
12. I have a sense of closeness.	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]
13. I have a positive feeling.	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]
14. I am proud to be a member.	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]
15. I am a valuable member.	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]

Section 3 **Your Purchase Motivation**

Circle the one number that best describes purchase motivation in QQ Games and QQ Paipai.

	QQ Games					QQ Paipai				
	Strongly Disagree [1]	Disagree [2]	Neutral [3]	Agree [4]	Strongly Agree [5]	Strongly Disagree [1]	Disagree [2]	Neutral [3]	Agree [4]	Strongly Agree [5]
1. It would improve my shopping productivity.	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]
2. It would enhance my effectiveness in shopping.	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]
3. It would be useful in buying what I want.	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]
4. It would improve my shopping ability.	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]
5. It would be easy to use.	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]
6. It would allow me to shop the way I want to shop.	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]
7. Shopping would be fun.	[1]	[2]	[3]	[4]	[5]	[1]	[2]	[3]	[4]	[5]

8. Shopping would make me feel good.	[1] [2] [3] [4] [5]	[1] [2] [3] [4] [5]
9. Shopping would be boring.	[1] [2] [3] [4] [5]	[1] [2] [3] [4] [5]
10. Shopping would involve me in the shopping process.	[1] [2] [3] [4] [5]	[1] [2] [3] [4] [5]
11. Shopping would be exciting.	[1] [2] [3] [4] [5]	[1] [2] [3] [4] [5]
12. Shopping would be enjoyable.	[1] [2] [3] [4] [5]	[1] [2] [3] [4] [5]
13. Shopping would be uncomfortable.	[1] [2] [3] [4] [5]	[1] [2] [3] [4] [5]
14. Shopping would be interesting.	[1] [2] [3] [4] [5]	[1] [2] [3] [4] [5]

Section 4 **Your Purchase Intention**

Circle the one number that best describes purchase intention in QQ Games and QQ Paipai.

	Strongly Disagree [1] ▼	Disagree [2] ▼	Neutral [3] ▼	Agree [4] ▼	Strongly Agree [5] ▼
1. In QQ games, I intend to transact with Q-coins in the future.	[1]	[2]	[3]	[4]	[5]
2. I recommend others to buy Q-coins from QQ game.	[1]	[2]	[3]	[4]	[5]
3. I intend to buy avatars from QQ game.	[1]	[2]	[3]	[4]	[5]
4. I recommend others to buy avatars from QQ game.	[1]	[2]	[3]	[4]	[5]
5. I intend to buy virtual items (Q-coins, gaming cards, etc.) from QQ Paipai.	[1]	[2]	[3]	[4]	[5]
6. I intend to buy tangible products from QQ Paipai.	[1]	[2]	[3]	[4]	[5]
7. I recommend others to buy virtual items from QQ Paipai.	[1]	[2]	[3]	[4]	[5]
8. I recommend others to buy tangible products from QQ Paipai.	[1]	[2]	[3]	[4]	[5]
9. I would consider purchasing tangible products from QQ Paipai in the future.	[1]	[2]	[3]	[4]	[5]

Section5 **ABOUT YOU**

In this section, a few general questions ask you that will help understand your responses in relation to other questions. Please be assured that your responses here and throughout the questionnaire will be held strictly **confidential.**

1. What is your age? _____ years old

2. What is your gender? 1. ( ) Female 2. ( ) Male 3. ( ) Other

3. What is your grade level?

1. ( ) Freshman 2. ( ) Sophomore 3. ( ) Junior 4. ( ) Senior 5. ( ) Master's 6. ( ) Ph. D

4. What is your major?

1. ( ) Public Management 2. ( )Business 3. ( ) Arts & Science 4. ( ) Music 5. ( ) Technology & Engineering 6. ( ) Other

5. Which statement best describes your current job status?

1. ( ) Part-time job 2. ( ) Full-time job 3. ( ) Not currently working 4. ( ) Other

6. What is your residence (Hukou) area? _____ Province

7. **What is your average income per month? (If you don't work currently, please indicate average income of your family.)**

1. 2000-4000rmb	2.4001-6000rmb	3. 6001-8000rmb	4.8001-10000rmb	5. more than 10000rmb

8. **Please select the following number to describe the frequency of your usage of the channels in QQ during the past 2 weeks.**

1.Never 2.Rarely 3. Sometimes 4.Most of the time 5. Every time

Channel	QQ Games	QQ IM	SOSO	Paipai
Frequency				

9. **How many avatars have you purchased from QQ Games in the last month? _____**

10. **How much Q-Coins have you purchased from QQ Games in the past month? _____RMB**

11. **When playing QQ Games, how often do you actually purchase virtual items?**

1.( ) Never 2.( ) Rarely 3.( ) Sometimes 4.( ) Most of the time 5. () Every time

12. **When shopping in Paipai, how often do you actually purchase?**

1.( ) Never 2.( ) Rarely 3.( ) Sometimes 4.( ) Most of the time 5. () Every time

13. **How much Q-Coins have you purchased in the past month at Paipai ? _____RMB**

14. **How much you spend on purchasing products from Paipai per month?**

1. ( ) None 2. ( ) less than 100rmb 3. ( ) 100-200rmb 4. ( ) 201-300rmb 5.( ) more than 300rmb

15. **Please indicate the amount of items you purchased from Paipai or QQ Games in the past month.**

Category	Books	Movies, Music & Games	Electronics & Computer	Home, Garden & Tools	Grocery, Health & Beauty	Clothing, Shoes & Jewelry	Sports & Outdoors	Virtual Items
Item Number								

Thank you for your time ☺

APPENDIX B

IRB APPROVAL LETTER

UNT
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Discover the power of ideas.

OFFICE OF THE VICE PRESIDENT FOR RESEARCH AND ECONOMIC DEVELOPMENT
Research Services

June 22, 2011

Dr. HaeJung Kim
Department of Merchandising and Hospitality Management
University of North Texas
RE: Human Subjects Application No. 11-277

Dear Dr. Kim:

In accordance with 45 CFR Part 46 Section 46.101, your study titled "The Control Effects of Relational Social Capitals: Transforming Attitudinal Engagements to Purchase intentions in QQ China" has been determined to qualify for an exemption from further review by the UNT Institutional Review Board (IRB).

Enclosed is the consent document with stamped IRB approval. Please copy and **use this form only** for your study subjects.

No changes may be made to your study's procedures or forms without prior written approval from the UNT IRB. Please contact Jordan Harmon, Research Compliance Analyst, ext. 3940, if you wish to make any such changes. Any changes to your procedures or forms after 3 years will require completion of a new IRB application.

We wish you success with your study.

Sincerely,

Patricia L. Kaminski, Ph.D.
Associate Professor
Chair, Institutional Review Board

PK:jh

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