UNDERSTANDING MEMBER IDENTIFICATION IN

THE ONLINE TRAVEL COMMUNITIES AND

MEMBER VOLUNTARY BEHAVIORS

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in partial fulfillment of
the requirements for
the Degree of
DOCTOR OF PHILOSOPHY
December, 2005

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DEDICATION

To my parents, Yong Jin Lee and So Jin Yoon.
You have always prayed for and believed in me.

ACKNOWLEDGEMENTS

"……whatever you do, do it all for the glory of God."
Corinthians 10:31

To begin with, I praise God who has always been with me through my whole academic career. You gave me an opportunity to study more and a lot of courage and strength in all my life. I could not become the person I am today without You.

There are many people who contributed to my dissertation in many ways. First, I wish to express my sincere appreciation to my advisor, Dr. Woo Gon Kim, for his excellent guidance, caring, and providing me with a stress-free working relationship. He treated me like a colleague. The members of my dissertation committee, Dr. Hailin Qu, Dr. Jerrold Leong, and Dr. Tom Brown, have generously given their time, their insights, and their trust. I thank them for their contribution and their good-natured support. I also thank two graduate colleagues, Belinda Butler and Rebecca Eastham, for helping me to exactly express what I want to say in English.

I would be remiss if I do not express my deepest gratitude to my family for their support and sacrifices during my academic career. My accomplishments are a reflection on them. My parents, Yong Jin Lee and So Jin Yoon, have been with me through my failures and successes. They have knelt and prayed for me devotedly. I thank them for that. My two sisters, Young Hwa Lee and Young La Lee, have experienced hard times with me for a long time. I thank them for always being at my side. My younger sister Young Na deserves special thanks. I could not have done it without her many sacrifices.

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CHAPTER I

INTRODUCTION

Overview

As the e-business environment becomes more competitive, there is a growing

realization for the need to establish deeper relationships with the customer as a means of

creating a more competitive edge over other firms (Armstrong & Hagel, 1996). Creating

an online business environment in which people interact freely with others could be the

most effective way to form such desirable relationships with their customers (Kim, Lee,

& Hiemstra, 2004). Under this online environment, people can build closer relationships

with like-minded people by sharing their information or experiences. Such strong

relationships enable people to develop a sense of belonging to the community, resulting

in highly beneficial behaviors to community service providers (Gruen, Summers, &

Acito, 2000; McWilliam, 2000). Consequently, well-established online communities not

only fortify traditional business functions, but also have potential to increase business

performances (Hagel, 1999; McWilliam, 2000).

The potential benefits of an online community are more substantial to the travel

industry, given that the current trends have demonstrated the importance and implication

of online community in the travel market (Kim et al., 2004; Wang & Fesenmaier, 2004).

As a benefit of being a member, many travelers have the opportunity to share valuable

information or knowledge and to communicate with others who have similar interests in

travel. Some travelers may simply share their knowledge or experience, while others tend more to develop strong relationships with like-minded travelers (Wang & Fesenmaier, 2004). In either case, such interaction with other travel members enables travelers to gain an emotional attachment to their community, leading consequently to favorable member voluntary behaviors that benefit the community service provider (Kim et al., 2004).

Problem statement

By establishing an online travel community, in which travel members can communicate around their interest in travel, community providers benefit from their ability to develop a sustainable competitive advantage (Hagel, 1999; Kim et al., 2004; Wang & Fesenmaier, 2004). For example, community marketers can understand customers' needs and the current trends of travel by referring to members' active communication and interactions. Considering that members have a narrow interest, marketers can also employ a more specific marketing strategy (Ridings, Gefen, & Arinze, 2002; Wang & Fesenmaier, 2004). Further, online travel community marketers can also influence members' decision-making process, because online travel community members are more flexible to modify their behaviors in terms of the community value (Gruen et al., 2000).

In fact, some travel companies such as Travelocity (www.travelocity.com) and Easyjet (www.easyjet.com) have provided frequent travelers/flyers with a platform to share their travel tips and experiences with hotels, travel destinations, air flights, restaurants, and travel packages (Easen, 2003; Hagel, 1999; Wang & Fesenmaier, 2004).

Another example includes member-initiated online travel communities which have also become very popular among individual travelers. For instance www.flight-club.org and www.travelwalk.net help travelers find travel partner(s) who would be on the same flight or have the same travel plans (Easen, 2003).

In spite of such a proliferation of online travel communities, little is known about what factors encourage travelers to interact with other members in the community; how members progress through the community activity, and what member voluntary behaviors can be expected as a result of members' psychological attachment to their community. A better knowledge of travel members' community activities thus empowers community service providers to develop a sustainable competitive edge over others.

Objectives of the study

Based on the problems mentioned above, the objectives of the study are to: (1) identify significant factors influencing online travel community members to interact with other members; (2) explore member participation behaviors in the online community; and (3) reveal highly beneficial online travel member voluntary behaviors that occur when members develop a sense of belonging to the community.

Given the fact that members with frequent observation are more inclined to communicate around their interest in travel (Ahuja & Galvin, 2003; Okleshen & Grossbart, 1998), this study postulates that the positive effects of three antecedents (i.e., travel involvement, social affiliation, and community benefits) on community interaction activities will be influenced by the strength of online traveler's observation frequency.

Using the sequential relationship of (interaction) → (identication) → (member voluntary behaviors) (Bergami & Bagozzi, 2002; Kozinets, 1999; Wang & Fesenmaier, 2004), this study also posits the effect of community observation on community identification with a given online travel community is fully mediated by the member's interaction activity level. Namely, active observation of community activities induces willingness to communicate around their shared interests by making it easy to evaluate the community service. Such increased interaction activities further enables members to identify themselves as a member of the online community (Dutton, Dukerich, & Harquail, 1994; Koh & Kim, 2004; Okleshen & Grossbart, 1998).

It is further suggested that more interactive members are more likely to become psychologically attached to their community and engender highly beneficial behaviors to community service providers, based on some current research suggesting that members vary in their contributions to the community according to their interaction frequency levels (Ahuja & Galvin, 2003; Langerak, Verhoef, Verlegh, & Valck, 2003; Okleshen & Grossbart, 1998; Ridings et al., 2002).

Combining the above perspectives, this study has three additional objectives. The specific purposes of the study are to: (1) investigate whether online travel community member's observation frequency fortifies (moderates) the effects of three antecedents on the member's interaction activities; (2) examine whether online travel community member's interaction level fully mediates the effects of community observation on community identification; and (3) asses whether online travel community member's interaction level strengthens the relationship between community identification and

member voluntary behaviors (i.e., knowledge sharing, community promotion, and behavioral changes).

Definition of terms

- Online travel community – a group of people who interact around a shared interest in travel and tourism, where the interaction is partially supported by technology and guided by the online community's shared values and norms

- Travel involvement – a person's perceived relevance and interest to a travel and tourism based on inherent need and values.

- Social affiliation – a person's tendency to develop and maintain relationships with other members.

- Community benefits – the degree to which community services are perceived as being valuable and superior to those of available alternatives.

- Knowledge sharing – the degree to which a member's willingness to share his/her expertise or experiences with other members.

- Community promotion – the degree to which a member's willingness to spread the word about their community service and promote the community by playing leading roles in the community.

- Behavioral changes – the degree to which members behave in terms of their community values by modifying their consumption behaviors.

- Observation frequency – the degree to which members visit online communities and never contribute to ongoing conversations.

- Community interaction – the degree to which members participate in ongoing communications by sharing common interests.

5

- Community identification – the perceived sense of belonging to a particular online travel community.

Organization of the study

This dissertation is composed of five sections. An overview of the study including problem statement, objectives of the study, definition of terms, and organization of the study is first presented in chapter 1. In chapter 2, theoretical background of online communities and proposed variables is reviewed and the research model and hypotheses are subsequently presented. Chapter 3 and 4 include the methodology and the result of the study. Finally, discussion and conclusions of this study with limitations and suggestions for future research are elaborated in Chapter 5.

CHAPTER II

REVIEW OF LITERATURE

Online community

Definition of an online community

With the increasing popularity of online communities, much research has been

conducted to comprehend the fundamental nature of online communities. However, the

term "online community" has been interpreted in many ways, since there is no consensus

about the fundamental understanding of the online community concept. For example,

Romm, Pliskin, and Clarke (1997, p. 261) defined online communities as "… groups of

people who communicate with each other via electronic media." Within the context of

Usenet groups, Okleshen and Grossbart (1998, p. 276) conceptualized online

communities as "… electronic networks of persons that typically lack real world,

traditional communities' wide range of functions, duration, and depth of

interconnectedness and sharing." Kadaras et al. (2003, p. 41) conceived online

communities as "… groups of people who communicate with each other via electronic

media, such as the Internet." Bagozzi and Dholakia (2002, p. 3) defined online

communities as "…mediated social spaces in the digital environment that allow groups to

form and be sustained primarily through ongoing communication process." Ridings et al.

(2002, p. 273) also viewed online communities as "groups of people with common

interests and practices that communicate regularly and for some duration in an organized

way over the Internet through a common location or mechanism." Building on these prior definitions, Porter (2004) defined online communities as groups of people and business partners who interact around a shared interest via advanced technologies including computer-based technologies.

Although various opinions exist on the fundamental understanding of the online community, almost all definitions emphasize such key features as interacting groups of people, shared interest and mediated communication processes (Bagozzi & Dholakia, 2002; Lee, Vogel, & Limayem, 2003; Porter, 2004; Wang, Yu, & Fesenmaier, 2002). For example, Porter (2004) addressed five attributes characterizing online communities

- Purpose – The specific focus of communication and interaction among community members. Member participation in online communities starts with this shared purpose, leading to a sense of membership.
- Place – The specific location of interaction. The interaction is at least partially supported and guided by computer-based information technology.
- Platform – The ways of implementing interactions among community members. Synchronous (real-time) and Asynchronous communication can be designed to increase member communication with other members
- Population – People who interact with others around their areas of interest. Community interactions among members can be defined more detail based on membership size (small-groups or networks) and the level of social tie (strong or weak).
- Profit model – Embodied commercial success of online communities which is

supported by vibrant interactions among members.

Namely, an online community can exist on the net by members' active communication with others, since community participation is driven by member's rational and volitional choice (Bagozzi & Dholakia, 2002; Lee et al., 2003). Such active discussions arise only when a group of people (1) have shared interests; and (2) exchange information about specific topics (Ridings & Gefen, 2004). Information and knowledge are formed as a result of members' active communication with each other (Lee et al., 2003). Finally, member relationships and discussions should be supported by computer-based information technology such as chat room, email list, and bulletin board (Lee et al., 2003; Porter, 2004; Ridings et al., 2002). The definitions of online communities proposed by various researchers are summarized in Table 1.

Table 1

Definitions of online communities

Researcher	Definition
Rheingold (1993)	Social aggregation that emerge from the Net when enough people carry on public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace.
Romm et al. (1997) Hagel and Armstrong (1997)	Groups of people who communicate with each other via electronic media. Computer-mediated spaces where there is a potential for an integration of content and communication with an emphasis on member-generated content.
Lipnack and Stamps (1997)	A group of people who interact through interdependence tasks, guided by common purpose with links strengthened by webs of communication technologies.
Okleshen and Grossbart (1998)	Electronic networks of persons that typically lack real world, traditional communities' wide range of functions, duration, and depth of interconnectedness and sharing.
Komito (1998)	Online groups of people who either share norms of behavior or certain defining practices, who actively enforce certain moral standards, who intentionally attempt to found a community, or who simply coexist in close proximity to one another.
Hagel (1999)	Virtual communities are defined by brining people together with a common set of needs or interests.
Preece (2001)	A group of people who interact in a virtual environment. They have a purpose, are supported by technology, and are guided by norms and policies
Williams and Cothrel (2000)	Groups of people who engage in many-to-many interactions online.
Balasubramanian and Mahajan (2001)	Any entity that exhibits all of the following characteristics: an aggregation of people, rational utility-maximizers, interaction without physical collocation.
Boetcher, Duggan, and White (2002)	The gathering of people, in an online "space" where they come, communicate, connect, and get to know each other better over time.
Ridings et al. (2002)	Groups of people with common interests and practices that communicate regularly and for some duration in an organized way over the Internet through a common location or mechanism.
Bagozzi and Dholakia (2002)	Mediated social spaces in the digital environment that allow groups to form and be sustained primarily through ongoing communication process.
Kadaras, Karakostas, and Papathanassiou (2003)	A group of people who communicate with each other via electronic media, such as the Internet, share common interests.
Lee, Vogel, and Limayem, (2003)	A cyberspace supported by computer-based information technology centered upon communication and interaction of participants to generate member-driven contents, resulting in a relationship being built up.

Koh and Kim (2004)	A virtual community may be understood as one of the knowledge community types via understood as one of the knowledge community types via computer-mediated communications (CMC).
Porter (2004)	An aggregation of individual or business partner who interact around a shared interest, where the interaction is at least partially supported and/or mediated by technology and guided by some protocols or norms
Kang, Lee, and Choi (in press)	A social group or organization where people voluntarily become a member and participate in interaction activities with other members to exchange desired benefits they seek through chosen community

A typology of an online community

Various types of online communities exist online. Many researchers have classified online communities based on a variety of components, including consumer needs (Armstrong & Hagel, 1996), relationship orientation modes (Markus, 2002; Porter, 2004), and establishment type (Porter, 2004) (see Table 2). In their classification scheme, Armstrong and Hagel (1996) propounded that different people would have different needs and desires for participation in online communities. They classified online communities into "communities of transaction," "communities of interest," "communities of fantasy," and "communities of relationship" by suggesting that some people view access to information as the primary cause of their existence on the online community, whereas others join an online community for relationship building. Markus (2002) categorized online communities based on community service providers' relationship orientation modes, such as social, professional, and commercial orientation. A socially-oriented online community aims to establish a relationship to other members, professionally-oriented online communities evolve around professional knowledge sharing, and commercially-oriented communities focus on gaining business benefits. Based on Markus' (2002) classification, Porter (2004) categorized online communities as member-initiated communities (social and professional relationship) and organization-

sponsored communities (relationships both among members and between individual members and the sponsoring organization). Porter (2004) focused organization-sponsored communities, by indicating that such types of online communities continue to gain acceptance by commercial entities.

Table 2

Classifications of online communities

Researcher	Classified by	Types of online community
Armstrong and Hagel (1996)	Consumer needs	Transaction, interest, fantasy, and relationship
Kozinets (1999)	Interaction modes	Informational, relational, recreational, and transformational
Jones and Rafaeli (2000)	Social tie strength and the nature of membership	Virtual communities and virtual publics
Markus (2002)	Community service providers' relationship orientation modes	Social, professional, and commercial
Hogg, Laing, and Newholm (2004)	Consumer needs and activities	Communities of brands or products, communities of interest, communities of fantasy, communities of relationship
Porter (2004)	Community establishment type and relationship orientation	Member-initiated (social and professional) and organization-supported (commercial, nonprofit, and government)

Gaining economic potential of online communities

Much research suggested that the business benefits of online communities can be realized by integrating commercial activity into informational and social interaction (Armstrong & Hagel, 1996; Balasubramanian & Mahajan, 2001; Kozinets, 1999; Wang et al., 2002). For example, in their economic leveraging framework, Balasubramanian and Mahajan (2001) proposed three sources of social interactions: (1) focus-related utility (U^f), which refers to the member's belief of increased value to the online community through each member's contributions; (2) consumption utility (U^c), which refers to the

member's belief of obtained value through his/her direct consumption based on a shared value and interests; and (3) approval utility (U^a), which refers to the member's needs for recognition from their contributions to the online community. The member's total social interaction utility through his/her interaction activities in online communities was represented as

$$U_i = U_i^f (r_j)_{j=1......N} + U_i^m (r)_{k=1......N, k \neq i} + U_i^a (r_i) - c(r_i)$$

where

U	= utility
r	= contributions
c(r)	= cost
i	= number of member

They suggested that members' three types of social interaction utilities should be properly experienced through their participation and interaction activities, for members want to increase their total social-interaction utility. They concluded that by ideally balancing commercial activity and social interaction, community organizers benefit from their ability to exert their influences to make members adjust their behaviors based on a sense of community values.

McWilliam (2000) mentioned that by ensuring that customers enjoy conversations about specific topics and shared interests, community managers can recognize customers' perceptions about their products or services; suggesting that organizers can provide a better service to their customers by utilizing gathered feedback from customers on communities. By pointing out that business firms who want to realize online community's business potential should first understand the multiple needs of members, Armstong and Hagel (1996) argued that maintaining a balance between social interactions and commercial activities is crucial to the success of online communities.

They also suggested that online businesses benefit from their ability to build customer loyalty and gain insights into the multiple needs of customers. In a similar vein, Kozinets (1999) reported that members' relational interactions start with their information exchange, which in turn strengthens their consumption activities within shared value and interests. Wang et al. (2002) also recommended that shared focus on interests in travel can be embodied by practical transactions within the online community. In conclusion, to be more successful in organizing online communities, commercial activities should be carefully incorporated into informational and social interactions.

Table 3

Managing online communities

Leading and growing the community	Managing volunteers	Creating and editing appropriate content
• Creating, communicating, and coordinating the vision, purpose, and nature of the community, both internally and externally. • Understanding the prime motivations for community participation. • Ensuring a pleasant and engaging experience from first contact to lasting relationship, while meeting corporate and community security and information needs. • Managing the balance between attracting new members and maintaining community intimacy. • Using political, diplomatic, and decision-making skills.	• Recognizing the talents that volunteers must have to succeed in stimulating participation. • Recognizing the determinants of trust and credibility within the community. • Understanding volunteer motivations and limits to volunteer capacities. • Establishing a reward system, mentoring, and training for volunteers. • Managing the key volunteer activities. • Managing the relationships among professional managers, volunteers, and community members.	• Understanding the interplay between serious and entertaining content, freedom of speech, and the brand community values. • Sensing membership concerns. • Balancing opinion leadership and stimulating healthy debate among the membership. • Identifying topics of interest, managing guest/expert appearances, soliciting their-party input. • Creating and managing the archive, and tracking community development for members and brand management.

Source: McWilliam, 2000; p. 51

	Degrees of social interaction between constituents	
	Low	High
Diffused	**Mass market group** Example: Markets for most branded consumer products Marketing activities are focused solely on creating and delivering products and services to the marketplace. Consumers prefer the seller who offers the greatest product- or service-related utility.	**Contact-based opportunity group** Example: Consumers accessed via a personal-selling network Variance in interests dilutes a focused marketing message, but interpersonal contacts can be leveraged to create person-to-person selling networks.
Well-defined	**Need-based opportunity group** Example: Member of the local credit union or the American Automobile Association Pooled demand creates economies of scale in communication and distribution, and translates into bargaining power when dealing with sellers.	**Community-based opportunity group** Example: A virtual ethnic community Pooled demand creates economies of scale and translates bargaining power. Economic exchange leverages social interaction between group members to create a sustainable competitive advantage.

Focus of activity/interaction

Source: Balasubramanian & Mahajan; 2001, p. 110

Figure 1

Types of economic opportunities in online communities

Table 4

Marketing focus between need-based opportunity group vs. community-based opportunity group

Dimension of comparison	Need-based opportunity group	Community-based opportunity group
Overall objective	To increase market efficiency by lowering transaction and communication costs, and achieving economies of scale.	To build an economically viable community that emphasized social interaction between its constituents as a basis for joint social and economic exchange.
Objectives of members	Sellers and intermediaries maximize profit, consumers maximize product/service consumption utility.	Associated sellers and community organizers maximize profits, consumers maximize the sum of utility from product/service consumption and from social interaction (i.e., focus-related consumption, and approval utility).
Basis for utility and choice	Comparison of prices and quality offered by all accessible sellers.	Ability of community constituents to draw on resources of other constituents in realizing full potential of product.
Role of intermediary/organizer	Intermediary assumes responsibility for efficient interfacing of sellers with consumers.	Alignment of economic exchange with focus of community (e.g., environmental advocacy, ethnicity). Integration of social and economic exchange.
Product strategy	Products are designed to fit consumer needs.	Organizer of community is responsible for preserving focus of community, facilitating social interaction between community constituents, ensuring that sellers are aligned with focus of community, and encouraging economic → social grafting.
Pricing	Pricing is based on perceived consumer value for product.	Products are allied with focus of community and may require constituent contributions for full realization of their potential. Products are positioned in ways that encourage community formation based on product ownership (e.g., Saturn Corp.).

Managing competition	Competition is managed by striving to provide superior value.	Pricing is partly based on perceived consumer value for product, but also reflects additional value consumers derive from alignment of product with focus of community, and from contribution of other community constituents to product.
Managing seller reputations	Sellers organize independent branding efforts; intermediary assumes some responsibility for ensuring seller trustworthiness	In addition to branding efforts and intermediary inputs, interaction within the community can provide signals of seller performance (e.g., through word-of-mouth effects).
Understanding consumer behavior	Focused on understanding preferences and choice processes employed by consumers.	In addition to the traditional emphasis on understanding preferences and choice processes, focused on understanding how social interaction can be leveraged to create interest in products and services.

Source: Balasubramanian & Mahajan, 2001; p. 130-131

The value proposition in travel sector

Several studies illustrated that the potential business benefits of an online community are very substantial to the travel industry (i.e., Armstrong & Hagel, 1996; Balasubraminan & Mahajan, 2001; Hagel, 1999; Kim et al., 2004; Wang & Fesenmaier, 2004). To begin with, Armstong and Hagel (1996) illustrated the importance and implication of online community in the travel market, by suggesting that business firms who want to tap into online communities' business potential should offer participants the greatest range of services when they address multiple needs of potential members. They suggested that the forming of new subcommunities should be encouraged by segmenting the community by members' main interests in destination or type of travel.

> A travel community, for instance, could allow visitors to search for information about museums and special events in, say, London, and even to purchase airline tickets and make hotel reservations (community of transaction). The site could offer bulletin boards filled with tips from people who have traveled to London recently; it also could offer the opportunity to chat with travel experts, residents of London, and others (community of interest). Travelers might be invited to join a game hosted by an airline running a special deal (community of fantasy). The site even could make it possible for single travelers, such as elderly widows and widowers, to chat and perhaps find compatible travel companions for a trip to London (community of relationship) (Armstrong & Hagel, 1996; p. 136).

To elucidate the economic potential of virtual communities, Hagel (1997) focused on the leisure travel business sector. Hagel (1997) proposed the five elements of the definition of the value proposition of virtual communities: (1) a unique shared focus that brings together people with a common set of needs, (2) integrating content with discussion forums in this interactive environment, (3) knowledge on the value formulated

over time, (4) aggregating competing vendors and publishers over time, and (5) the need

for a commercial motivation for the community organizer. He asserted that the real

business benefits from establishing online travel communities can be found through

linking abundant sets of travel-related content to transaction capability with a distinctive

focus on communication.

> If you thought about leisure travel as an area of common interest, you could imagine a broad
>
> range of published content that could be brought together – everything from special interest
>
> magazine to travel directories to flight schedules, all easily indexed and organized for people who
>
> have this interest. Combine that with a wide range of bulletin board services to enable people to
>
> communicate around their interest in leisure travel, and to share their own experiences. Include a
>
> set of chat areas, where people could talk in real time to others about areas of the world that they
>
> are planning trips to. Then add transaction capability. You could not only plan your next travel
>
> vacation, you could book the airline reservation or the hotel reservation as part of this virtual
>
> community experience (Hagel, 1997; p. 58-59).

Balasubramanian and Mahajan (2001) defined economic leverage as the

integration of the social conversations about topics and shared interests into profit-

oriented market activities. Using the following travel-related example, they also

demonstrated how the social aspects of the community could be leveraged to facilitate the

economic transaction.

> Kay is an active member of a virtual community based on ethnicity that is active in the United
>
> States. She frequently contributes to the political and literacy sections of this community. Kay's
>
> elderly parents are due to travel from her native country to visit her, and this will be their first visit
>
> abroad. Kay is concerned about their travel and wishes to link them up with other, more

experienced travelers who share the same travel plan. A travel agent associated with the community offers their service, and links up Kay's parents with some community members who are returning to the United States after visiting their native country. Kay purchases the tickets for her parents from the agent, and willingly pays a premium over the prices available from outside sellers (Balasubramanian & Mahajan, 2001; p. 127-128).

Profile of online community members

In a nationwide phone survey, the Pew Internet & American Life Project (2001), conducted by Horrigan and Rainie, surveyed 1,697 Internet users to gain insight into online community activities. The results showed that the online community is a vibrant social capital where many potential members enjoy conversations about specific topics and shared interests with relationships among members. In line with previous studies (Preece, Maloney-Krichmar, & Abras, 2003; Romm et al., 1997), results showed that online community members have powerful "virtual identities" through their active interaction around their interests. Member participation and interaction in online communities has significantly impacted the member's lives by acting as a reference groups such as a family or close friends.

Above all, the results showed that the demographic profiles of the community member population are quite similar to the overall Internet population. People who are young, have obtained more education, and earn higher levels of income, are more prone to communicate about a shared interest. Compared to women, men were more likely to be influenced due to shared values and interests. Men were more willing to adjust their knowledge and behaviors based on the chosen online community's shared value and interests. However, their membership levels could vary depending on social ties to

groups and ideas with which people are already involved. Member characteristics or the

type of communication were also different based on the type of online communities.

Selected survey findings are presented here:

- 84% of Internet users (about 90 million Americans) have at one time or another

  contacted an online group (the Pew Internet & American Life Project, 2001; p. 2).

- Tens of millions of Americans have joined communities after discovering them

  online (the Pew Internet & American Life Project, 2001; p. 2).

- 79% of them identify at least one particular group with which they stay in regular

  contact (the Pew Internet & American Life Project, 2001; p. 3).

- Approximately 23 million Americans are very active in online communities,

  meaning that they email their principle online group several times a week (the

  Pew Internet & American Life Project, 2001; p. 3).

Social identity theory

In trying to understand such remarkable phenomena as online communities, the

major concern for researchers and marketers has been how individual members come to

see themselves as group members of a given online community and what the behavioral

results of the members are in terms of their membership definition. Social identity theory

(Tajfel, 1978; Tajfel & Turner, 1985) has provided an essential theoretical background

for questions regarding this membership process and behavior. The basic premise of

social identity theory is that by defining themselves as members of a particular social

relation group, group members establish social identity from the social universe to which

they belong (Hogg & Terry, 2000; Mael & Ashforth, 1992; Stets & Burke, 2000). This

means that a member's social identity, as part of self, is established through the member's

social identification that indicates the degree to which he or she finds a sense of

belonging to the community. The important issue here is that social identification

involves not only the perceptual self-categorization, but also the evaluative and affective

states within the social group (Dholakia, Bagozzi, & Pearo, 2004; Ellemers et al., 1999;

Stets & Burke, 2000; Tajfel, 1978). In fact, Ellemers et al. (1999) suggested that a

member's emotional attachment to his or her group is the main aspect of dynamic social

identification. It is generally concluded that such affective identification with the group

allows members to modify their thoughts and behaviors based on the group's shared

value and interests (Bergami & Bagozzi, 2000; Ellemers et al., 1999; McMillan &

Chavis, 1986).

Fostering a sense of emotional attachment to the online community has been

considered as the core value that promotes positive citizenship behaviors (Bagozzi &

Dholakia, 2002; Okleshen & Grossbart, 1998). To better understand a member's

affective engagement in community activities, social identity theory has been widely

applied to the various types of online community groups such as travel-related virtual

communities (Kim et al., 2004; Wang & Fesenmaier, 2004); web-based chat rooms

(Bagozzi & Dholakia, 2002); online brand communities (Carlson, 2005); Usenet

newsgroups (Blanchard & Markus, 2004; Okleshen & Grossbart, 1998); and network-

based small group virtual communities (Dholakia et al., 2004). It has been found that (1)

a member's sense of affective identification with the online community is achieved

through an interactive communication involving shared interests (Blanchard & Markus,

2004; Wang & Fesenmaier, 2004); and (2) to the extent that members become

emotionally attached to the community, they are more likely to show desirable ingroup

favouritism (Carlson, 2005; Kim et al., 2004; Okleshen & Grossbart, 1998).

Antecedents of online community activities

Travel involvement

Involvement is a concept that has received much attention as being an important

variable in predicting the behavior of the consumers, since it has been considered to be a

precondition to a number of positive behavioral outcomes (Gursory & McCleary, 2004;

Reid & Crompton, 1993). Travel involvement is herein defined as a person's perceived

relevance and interest to a travel and tourism based on inherent needs and values.

Numerous studies have found that involvement has a significant impact on all

aspects of the consumption process, such as search for information, evaluation of the

alternatives, and decision-making (Broderick & Mueller, 1999; Zaichkowsky, 1985).

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The central premise of the involvement research is that, according to a different object or activity, individual's perceived relevance would vary. More specifically, as a person's involvement level increases, they are more inclined to have positive attitudes and decision-making paradigms due to their increased interest in the object (Koufaris, 2002). An individual's level of involvement is affected by three components: (1) personal characteristics such as inherent needs, values, and interests toward the object; (2) physical elements of the object evoking a person's interest; and (3) situational factors temporarily increasing the personal relevance of the object (Zaichkowsky, 1985).

- Personal – inherent interests, values, or needs that motivate one toward the object
- Physical – characteristics of the object that cause differential and increase interest
- Situational – something that temporarily increase relevance or interest toward the object (Zaichkowsky, 1985; p. 342)

It is generally understood that involvement is the personal relevance or importance of a product category. According to Zaichkowsky (1985), involvement is conceptualized as a person's perceived relevance of the object based on ongoing needs, values, and interests. Involvement has been considered as a motivational force with the three fundamental features such as intensity, referring to the degree of involvement, direction, meaning the target of the involvement intensity, and persistence, indicating the duration of the involvement intensity (Warrington & Shim, 2000). With these elements, involvement has mainly been conceptualized as a multi-dimensional construct to include all facets of the involvement concept (Broderick & Mueller, 1999; Kapferer & Laurent,

1985; Quester & Lim, 2003). The underlying dimensions of the involvement construct are:

- Normative involvement – The relevance of a product to an individual's values and emotions; The value of the product, the degree to which it expresses the person's self (Broderick & Mueller, 1999; p. 102; Quester & Lim, 2003; p. 25);
- Enduring involvement – The interest and familiarity with a product as a whole over time; The personal interest a person has in a product category, its personal meaning (Broderick & Mueller, 1999; p. 98; Quester & Lim, 2003; p. 25);
- Situational involvement – The interest and commitment within a product class at a point in time (Broderick & Mueller, 1999; p. 98);
- Hedonic involvement – The level of arousal causing personal relevance; The hedonic value of the product, its ability to provide pleasure and enjoyment (Broderick & Mueller, 1999; p. 98; Quester & Lim, 2003; p. 25); and
- Risk importance/probability – The perceived importance/probability of the potential negative consequences associated with a poor choice of the product (Quester & Lim, 2003; p. 25).

Several researchers have suggested that involvement with leisure and travel is a strong precondition to tourists' behavioral outcomes. Gursoy and McCleary (2004) proposed that, as a tourist's involvement level increases, they are more eager to search product-related information and thus tend to have more expertise by developing more familiarity with destination choices and tourism products. Reid and Crompton (1993)

found that people with high involvement are more inclined to purchase leisure services, suggesting that the level of involvement significantly influences a person's response to the leisure purchases. Jamrozy, Backman, and Backman (1996) stated that, in the nature-based tourism context, highly involved tourists tend to pay more attention to searching for information and they are more likely to be opinion leaders by delivering that information to other individuals in a preferred manner. In a similar vein, Miquel, Caplliure, and Aldas-Manzano (2002) examined that people with a high level of involvement tend to show a greater level of product knowledge by realizing the strengths and weaknesses of different alternatives.

Some recent research has focused on the relationship between product involvement and loyalty, rather than specifying the behavioral outcomes. For example, Quester and Lim (2003) stressed that highly involved consumers are more likely to exhibit high levels of psychological attachment, including brand commitment and brand loyalty. Iwasaki and Havitz (1998) argued that people with high involvement level become loyal customers through sequential psychological processes.

Stage one		**Stage two**		**Stage three**
Formation of high levels of involvement in an activity	$\rightarrow$	The development of a psychological commitment to a brand	$\rightarrow$	The maintenance of strong attitudes towards resistance to change preferences of the brand
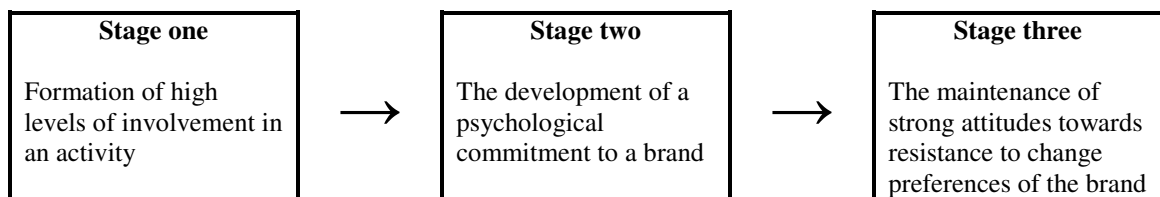
Sources: Iwasaki & Haritz, 1998; p. 256-280; Quester & Lim, 2003; p. 23

Figure 2

The sequential psychological process of involvement, commitment, and loyalty

Gordon, McKeage, and Fox (1998) also demonstrated that a relationship marketing strategy is more effective when the level of a person's involvement is high; and that the benefits of relationship marketing tactics with higher involvement were preferred over those with lower involvement. Consequently, involvement develops when an individual considers a certain object relevant or important. When people with high involvement respond to the product, they reveal a tendency to have a comprehensive decision-making process.

Table 5

Conceptual definition of involvement

Study	Focus	Definition
Day (1970)	Object	The general level of interest in the object or the centrality of the object to the person's own ego-structure (p. 45)
Bowen & Chaffee (1974)	Product class	A direct outgrowth of the potential benefits or rewards the product holds for the consumer (p. 615)
Houston & Rothschild (1978)	Individual and situation	The strength of the pre-existing relationship between an individual and the situation in which the behavior will occur (p. 184)
Bloch (1981)	Product class	A construct which affects consumer behavior on an ongoing basis (p. 62)
Zaichkowsky (1985)	Object	A person's perceived relevance of the object based on inherent needs, values, and interests (p. 342)
Celsi & Olson (1988)	Individual knowledge and experience	Relatively stable, enduring structures of personally relevant knowledge, derived from past experience and stored in mind (p. 212)
Havitz & Dimanche (1990)	Object	A psychological state of motivation, arousal, or interest between an individual and recreational activities, tourist destinations, or related equipment, at one point in time (p. 180)
O'Cass & Muller (1999)	Product	The intensity with which a product gestalt is embedded in and driven by the consumers' value system (p. 402)
Broderick & Muller (1999)	Product	The extent to which an individual is characterized by an incremental cognitive process, which connects the individual to a product (p. 104)
Warrington & Shim (2000)	Product	The perceived relevance of a product class based on the consumers' inherent needs, interests, and values (p. 764)
Koufaris (2002)	Object	A person's motivational state towards an object where that motivational state is activated by the relevance or importance of the object in question (p. 211)

Source: Andrews, Durvasula, & Akhter, 2001; p. 32

Social affiliation

      For this study, social affiliation is described as a person's tendency to develop and maintain relationships with other members. The need for social affiliation has proven to be predictive of human behavior in a wide range of social psychological context. Several researchers viewed a person's social affiliation need as a personality trait and individual differences, suggesting that the level of need for social affiliation varies across people (i.e., Bove & Johnson, 2000; Hill, 1987; Mathwick, 2002; O'Connor & Rosenblood, 1996; Wong & Csikszentmihalyi, 1991). In other words, some people are more interested in interpersonal relationships, while others enjoy being alone. In contrast to people with low affiliation need, highly sociable people are more apt to (1) develop interpersonal relationships (Bove & Johnson, 2000; Mathwick, 2002); (2) spend time interacting with others (Wong & Csikszentmihalyi, 1991); (3) desire long-term relationship (Bendapudi & Berry, 1997); and (4) utilize a relatively low level for seeking contact (O'Connor & Rosenblood, 1996).

      An individual's social affiliation desire is generally understood to have a positive impact on relationship strength (Bove & Johnson, 2000), because highly affiliated people are eager to search for close social interaction. For example, Mathwick (2002) revealed that communally-oriented online shoppers tend to develop a closer relationship with service providers, and that online consumers in communal relationships may play a significant role as community members who respond to other's needs and interests (see Figure 3).

Transactional community members are high in both communal and exchange traits. Their strong tendency of affiliation is tempered by a practical side manifest in their extensive involvement in online transactional community life. This group is more likely to provide feedback on products and services and to engage in online dialog with fellow patrons than other groups. This group is concerned about service continuity at a level higher than their fellow patrons, and experiences enjoyment, escapism and entertainment at a level comparable to the socializers and at a rate significantly higher than the non-relational cluster members. These factors combine to make this one of the most loyal customer segments served by virtual community sponsors.	**Personal connectors** exhibit the lowest relational traits in the sample as well as the lowest incidence of participation in relationships with fellow patrons or retailers who sponsor the sites they frequent. While this segment will participate in special interest communities devoted to their hobbies, they utilize the interaction mechanism of the Internet primarily to maintain contact with family, friends and professional associates. This segment doesn't perceive strong switching barriers nor does it perceive intrinsic value associated with the online experience. This group is, however, significantly more loyal to the online retailers they patronize than the lurker group.
Socializers are much more communal than exchange oriented, contributing to online relationships without expectation of repayment. Their heightened communal traits fuel the virtual community social system through connections with people who share their interest in hobbies, recreational activities, politics and religion. They are the most active joiners in the virtual environment, and report gravitating toward self-help and other interpersonal support groups at a higher level than members of any other cluster. They participate in chat room and email conversations with fellow customers of the commercial sites they patronize at a rate significantly below the transactional community members, however, they are more active in this regard, than the lurkers or personal connector segments. This group is similar to the transactional community members in their perception of switching barriers and intrinsic value inherent to the online experience.	**Lurkers** exhibit low relationship orientation traits, falling between the socializers and personal connectors on the exchange and communal dimensions. This group is distinguished from the others in its tendency to stay on the sidelines, observe, buy, but not connect on either a commercial, interpersonal, or shared interest level. In their commercial dealings, this group is unlikely to provide feedback to the online retailers they patronize or to engage in chat room or email conversations with special interest, political and religious groups as well as family and professional associates are all lower than any other cluster group. This type of individual does not invest in online relationships and is significantly lower in loyalty intentions than any other group

Source: Mathwick, 2002; p. 49

Figure 3

Online relationship orientation profile

Bove and Johnson (2000) also developed propositions that the level of social affiliation need may have a critical influence on the level of trust and commitment to service personnel. Additionally, Bendapudi and Berry (1997) argued that an increased need for relationships may enable customers to develop a high level of trust by placing more value on the service partners.

Some studies also suggested that highly affiliated people tend to seek out social recognition. Viewing person's social affiliation motivation as multidimensional construct, Hill (1987) examined that a person's desire for social affiliation includes the need for recognition from others. Hill (1987) suggested that highly sociable people are primarily focused on seeking out the approval of other people. Four different aspects of interpersonal contact service were as follows:

- Positive stimulation, the ability of affiliation to provide enjoyable affective and cognitive stimulation;
- Attention, the potential for enhancement of feelings of self-worth and importance through praise and the focusing of others' attention on oneself;
- social comparison, the capacity for reduction of ambiguity through the acquisition of self-relevant information; and
- motional support or sympathy.

Odekerken-Schröder, Wulf, and Schumacher (2003) also examined that people with high level of social affiliation expect a significant approval from others as a result of highly sociable interaction. They argued that if people view a certain relationship as satisfying for their social recognition need, they will participate more in the relationship.

Community benefits

Customers generally anticipate various benefits from the participation in a certain community as a member (Wang & Fesenmaier, 2004; Wang et al., 2002). The greater participants view community services as valuable, the more likely they are to modify their attitudes and behaviors based on the perceived benefits. A customer's perception of benefits is, thereby, a prerequisite to being a successful competitor (Morgan & Hunt, 1994). In this study, community benefits are conceptualized as the degree to which community services are perceived as being valuable and superior to those of available alternatives.

Considerable research efforts have been made to identify a participant's perception of benefits from community membership (i.e., Armstrong & Hagel, 1996; Bagozzi & Dholakia, 2002; Holland & Baker, 2001; Wang et al., 2002; Wang & Fesenmaier, 2004). It has been generally accepted that the concept of perceived benefits is classified into several types such as functional benefits, social benefits, psychological, and hedonic benefits (Gwinner, Gremler, & Bitner, 1998; Wang & Fesenmaier, 2004). Functional benefits relate to the transactional process, including aspects such as a variety of products, useful information, and economic advantages. Social benefits refer to the relationship building with like-minded people by sharing their information or experiences. Psychological benefits describe the psychological aspects of relationships such as a sense of belonging to the community from the social interaction. Finally, hedonic benefits reflect a state of emotion such as entertainment, enjoyment, and playfulness (Wang & Fesenmaier, 2004).

In a similar vein, Gwinner et al. (1998) classified customers' relational benefits with service industries into three primary types of benefits: (1) confidence benefits, the reduction of uncertainty in transactions and the increase in realistic expectations for the service encounter; (2) social benefits, the emotional aspects of relationships and focus on personal recognition of customers and employees; and (3) special treatment benefits, economic and customization advantages for the consumer. They discussed that customers' relational benefits with a service firm can be derived above and beyond core service benefits; and are relatively stable across all types of service relationships (Gwinner, 1998; p. 109).

Positive relationships between participant's perceived benefits and favorable outcomes for service providers have been well documented in previous research. In an online business-to-consumer context, Srinivasan, Anderson, & Ponnavolu (2002) identified eight precursors that potentially influence e-loyalty of consumers. They included a consumer's perception of benefits from membership as a strong determinant in explaining consumer's e-loyalty. Okleshen and Grossbart (1998) found that functional benefits of useful information have a significant impact on Usenet member's behavioral changes, suggesting that if group users put more value on the community's information quality, they are more receptive to the modification of their behaviors.

Kang et al. (in press) argued that if community services are perceived as being consistent with the benefits they seek, members would have an increased desire to interact with other members and an increased shared feeling of belonging to the community. Similarly, Bove and Johnson (2000) proposed that if customers can derive more value from the service experience with employees, customers are more likely to

develop a stronger relationship with workers. Consequently, online customers are apt to participate in and identify themselves as members, when participants place their value on the community service.

Observation frequency

Observation frequency is conceptualized as the degree to which members visit online communities and never contribute to ongoing conversations. Many empirical studies viewed member's observation frequency referring to lurking behavior without active interactions as an acceptable condition of an online community (Ardichivili, Page, and Wentling, 2003; Burnett, 2000; Ridings & Gefen, 2004; Thorbjørnsen, Supphellen, Nysveen, Pedersen, 2002). For instance, Ridings and Gefen (2004) stated that member's observation is one level of participation activity, while observers mainly visit online communities and never contribute to ongoing conversations, suggesting that member's observation should be considered as a possible condition of online communities in that they also use shared information to evaluate given information and future transactions. Burnett (2000) proposed that lurkers must be considered to be important participants in online communities; even though they are largely invisible, their acts of reading what others have written without also writing themselves constitute significant information-gathering activities. Based on Mathwick's (2002) online relationship orientation typology, Thorbjørnsen et al. (2002; p. 30) also specified that the lurkers perceive an online community to be a psychological construct by developing confidence in obtained information and realizing efficiency of information search. They suggested that an online community might be perceived as a psychological construct which focuses on the value

of new information. Sproull and Faraj (1997, p. 39) also said that lurkers are affected by the community value, though they are almost invisible in an online community due to the fact that they leave no obvious traces of their presence online. Ardichivili et al., (2003; p. 70), within the context of a large multinational corporation, investigated employees' motivation and barriers to participation in virtual knowledge-sharing communities of practice. They found that even when employees consider knowledge a public good belonging to the whole organization, employees' observation cannot be avoided until the community matures. Employees do not feel disposed to post messages, because they are not sure that their postings are important, or relevant, or completely accurate to their knowledge-sharing community. They revealed that employees are more willing to participate in ongoing communication among employees in other countries as they become familiar with the new online environment.

Not all members show the same level of the active interaction activities with other members, even after joining online communities as a member (Okleshen & Grossbart, 1998). This is because members progress from being observers to active members (Kozinets, 1999; Langerak et al., 2003, McWilliam, 2000, Walther, 1995). More specifically, members mostly observe the community activities when they newly participate in a certain online community (Rothaermel & Sugiyama, 2001). Members become active participants who contribute to the communication, however, as they visit online communities regularly and observe the community activities (McWilliam, 2000; Rothaermel & Sugiyama, 2001). Given that the online community is a social capital, Takahashi, Fujimoto, and Yamasaki (2003) further showed that even lurkers propagate shared information on topics of common interest to others who are not a member. They

suggested that the lurkers should not be rushed into interactive communications until they fully understand what is going on inside the online community. They concluded that to make them to keep their interests in the online travel community, rather than distributing too much information, moderating ongoing communications based on the community value is more important.

It is thus clear that online community members with frequent observation are more likely to interact with other members, since they can evaluate the community service more exactly (Bendapudi & Berry, 1997). Such active observation might be more important in evaluating intangible community services that are difficult to evaluate prior to communication with other members around their field of interest. More frequent observers are more receptive to the community value and are more prone to give priority to the value of their community.

Online travel member voluntary behaviors

Considering that an online community is a group where people voluntarily become a member and interact with other members, the success of an online community depends on how members voluntarily do their acts based on a sense of community values (Bagozzi & Dholakia, 2002; Kang et al., in press). Current research also suggests that members' frequent interactions with others intensify their psychological attachment to a community and engender highly beneficial behaviors to community service providers (Gruen et al., 2000; McWilliam, 2000). Specifically, community service providers can benefit from members' active knowledge sharing (Ardichvili et al., 2003, Koh & Kim, 2004), promotion through positive word-of-mouth (Bendapudi & Berry, 1997; Gruen et al., 2000), and behavioral changes in terms of community membership (Gruen, 1995; Kim et al., 2004; Okleshen & Grossbart, 1998).

Knowledge sharing

Knowledge sharing refers to a member's willingness to share their expertise or experiences with other members. According to Ridings et al. (2002), knowledge sharing includes two basic modes of posting and observing activities. They suggested that as members benefit from the community service, rather than merely seeking out information, they are more likely to participate in communication with others by giving valuable information. In other words, as members become psychologically attached to the community, they are more inclined to provide their information or knowledge to others (Ardichvile et al., 2003; Koh & Kim, 2004; Wang & Fesenmaier, 2004). These members are more apt to share their expertise or experiences with other members, even

when they can not expect some kind of direct benefit (Ardichvili et al., 2003; Gruen, 1995). Specifically, they proactively post their knowledge or experiences to the group, quickly respond to other members' information requests, or voluntarily give their emotional support to others. Such helpful knowledge sharing is thereby a key prerequisite for the prosperity of the online community, because online communities can not sustain their competitive edge to the competitors without active knowledge sharing behaviors (Ardichvile et al., 2003; Koh & Kim, 2004).

Community promotion

Community promotion is operationalized as the degree to which a member's willingness to spread the word about their community service. The effectiveness of online travel communities can be maximized when their members promote the community service to others, since most online customers value personal sources of information above all other information sources (Bendapudi & Berry, 1997; Holland & Baker, 2001). Members' promotion activities can be expected when they (1) value the benefits of the community service (Bettencourt, 1997) and (2) become psychologically attached to their communities (Bhattacharya et al., 1995). Put differently, as members identify more with a particular community, they are more likely to promote the service to others. Such promotion activities can also be displayed in some different types (Gruen, 1995). That is, some members tend to directly spread favorable information (Bendapudi & Berry, 1997), while others are more likely to promote the community by playing leading roles in the community (Bettencourt, 1997; Gruen et al., 2000). However, in

either type, members' voluntary promotion activities are critical to the success of the online community.

Behavioral changes

Behavioral changes are defined as the degree to which members behave in terms of their community values by modifying their consumption behaviors. Although not all members are profitable, online travel community service providers seek to commercial success through increased value of their members (Hagel, 1999). This means that the ultimate goal of the community marketing approach is to exert its influence to make members adjust their behaviors in terms of a sense of community values (Gruen et al., 2000). From this view, some recent research suggests that members' frequent interactions with others intensify their psychological attachment to a community and engender highly profitable behaviors to community service providers (Gruen et al., 2000; McWilliam, 2000). As members categorize themselves in a particular community and identify themselves as members, they are more likely to modify their behaviors (Gruen, 1995; Okleshen & Grossbart, 1998). The more members see the community information as valuable and reliable, the more likely they are to accept and purchase travel-related services or products according to other members' suggestions (Kim et al., 2004).

Member voluntary behaviors as a revenue-generating asset

During the last decade, outcomes of online community activity have been mainly understood not from the perspective of commercial asset, but from the perspective of informational or social asset (Koh & Kim, 2004; Mills & Moshavi, 1999). By building

an online community, in which people can communicate around their field of interest,

community organizers predominantly have mostly attempted to gain non-commercial

benefits from member participation and interaction activity, rather than seek commercial

success. In other words, community service providers seek potential economic benefits

indirectly from member activity in the online community, rather than striving for

commercial benefits directly from it.

By presenting two sets of outcomes of relationship marketing, however, Gruen

(1995) proposed that member behaviors could be viewed as a revenue-generating asset to

the business firm that want to tap into relationship building with the customer. Gruen's

(1995) outcome set of relationship marketing included both psychological outcomes of

commitment, satisfaction, and trust; and the behavioral outcomes of propensity to

terminate relationship, organizer's opportunistic behaviors, and customer's citizenship

behaviors. Gruen (1995; p. 466) defined the lifetime value of the customer (LVC) as a

function of the expected length of relationship (PTR), allocated purchase share (APS),

organizer's opportunistic behaviors (OBs), and customer's citizenship behaviors (CBs).

The lifetime value of the customer (LVC) is expressed as follows:

$$LVC_{EQUITY} = \frac{1}{PTR}(CB_{INDIRECT} + APS_{DIRECT} - OB_{DIRECT})$$

where

    LVC   = the lifetime value of the customer
    PTR   = the expected length of relationship measured by propensity to terminate the
            relationship
    APS   = the sum of the purchase indicated by allocated purchase share
    CB   = customer's citizenship behaviors such as word-of-mouth advertising, a
            sense of affiliation, and behavioral changes, etc.
    OB   = organizer's opportunistic behaviors

Based on this equity foundation, Gruen (1995; p. 466) suggested that a lowering fluctuations in actual termination behavior is imperative to increase the value of the customer to the firm (LVC). The sum of the purchases plus the value of citizenship behavior (CB) less the value of losses sustained through opportunistic behavior (OB) indicates the lifetime value of the customer. Gruen's (1995; p. 466) model does not restrict valuation to sales volume alone, but allows the valuation to include citizenship behaviors (CBs) and opportunistic behavior (OBs). The total relationship equity can be maximized through decreases in propensity to terminate the relationship (PTR) or opportunistic behavior (OB) and through increases in allocated purchase share (APS) and citizenship behavior (CB).

In a similar perspective, Bendapudi and Berry (1997) found that different motivations for continuing relationship elicit different kinds of relationship outcomes, suggesting that individuals maintain relationships with the service providers either because they truly seek closer ones or because they have relatively few alternatives. Well-planned relationship marketing strategies were requested based on members' different relationship orientations.

		Level of dedication (voluntary participation)	
		Low	High
Level of constraints (belief of few option)	Low	Because this relationship lacks both strong constraints and dedication, customers are unlikely to perceive the need for stable relationships. The challenge for service firms under these conditions is to promote feelings of both dependence and trust in customers, thereby making them more amenable to relationships. **Objective: Relationship formation**	High dedication indicates good prospects for relationship enhancement. However, a low constraint level indicates there is no strong exit barrier to block an aggressive competitor. The service firm may improve relationship stability by investing in structural solutions to customer needs, thereby increasing dependency. **Objective: Relationship stability**
	High	The relationship may persist because the customer perceives no practical alternatives. However, this condition may change, leading to relationship dissolution. Moreover, low customer dedication makes relationship enhancement unlikely. Strengthening the quality of the relationship through trust-building is probably indicated. **Objective: Relationship enhancement**	This relationship should be especially strong and durable, with excellent prospects for further development. The high constraints contribute to stability and the high dedication increases the potential for creating broader and deeper ties. Preserving the high constraints and dedication levels is essential. **Objective: Relationship nurturing**

Source: Bendapudi & Berry, 1997; p. 32

Figure 4

Relationship marketing strategies based on customers' relationship orientation

Interaction and identification

A number of studies on an online community regarded members' active interaction with other members in the community as desirable (i.e., Koh & Kim, 2004; Ridings et al., 2002; Wang & Fesenmaier, 2004). Vibrant interaction with other members in the community allows members (1) to perceive the community to be more attractive (Dutton et al., 1994); and (2) to develop a sense of belonging to the community (Okleshen & Grossbart, 1998). Consequently, such increased interaction activities enables members to identify themselves as a member of the online community (Bhattacharya et al., 1995; Dutton et al., 1994; Okleshen & Grossbart , 1998). This study thus views community interaction and community identification as two important consequences in apprehending members' activities of online travel community.

Community interaction

Community interaction refers to the degree to which members participate in ongoing communicating by sharing common interests. It could be argued, that given the fact that members voluntarily participate in the community (Kang et al., in press), the online community can not survive without members' active interaction with other members (Ardichvili et al., 2003; Ridings et al., 2002; Wang & Fesenmaier, 2004). Online travel community members' intense communication with other members occurs when they are highly involved with the community by finding some potential values from chosen community (Wang & Fesenmaier, 2004). Online travel community members generally participate in active interaction activities by sharing common interests. Some people may seek valued information or advice, while others may want to respond to other

member's request quickly. Rather than focusing on such information sharing, members may prefer social interaction activities and influencing other members' decision-making processes (Armstrong & Hagel, 1996).

Furthermore, frequent interaction activities in the community strengthen an intended sense of membership (Dutton et al., 1994), resulting in a variety of desirable behaviors such as active sharing of information and knowledge (Koh & Kim, 2004; Ridings et al., 2002), promotion through favorable word-of-mouth (Bendapudi & Berry, 1997; Bhattacharya et al., 1995), and behavioral changes based on group value (Gruen, 1995; Kim et al., 2004; Okleshen & Grossbart, 1998).

Community identification

Based on previous studies, identification can be defined as the perceived sense of belonging to a particular online travel community. Although various definitions of identification have been made during the past decades, it is generally accepted that identification is (1) a process of self-categorization (Ellemers, Kortekaas, & Ouwerkerk, 1999); (2) an aspect of psychological attachment to a particular organization (Dutton et al., 1994); (3) a perceived oneness with a group (Bhattacharya et al., 1995; Mael & Ashforth, 1992); and (4) a perception of relatedness with other members (Masterson & Stamper, 2003).

Starting with McMillan and Chavis's (1986) sense of community (SOC) framework, Blanchard and Markus (2004) explored the concept of sense of online community. They suggested that the underlying dimensions of SOC in online

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community group are fairly close to the SOC observed in traditional community group. The four dimensions of SOC are:

- Feelings of membership – feelings of belonging to a particular community including recognition of members. These feelings arise within community boundaries

- Integration and fulfillment of needs – feelings of being supported by others in the community while also supporting them. Such integration can be made when individuals perceive their participation as fulfilling their various needs.

- Shared emotional connection – feelings of emotional support developed through vibrant interaction with other members around their field of interest (Blanchard & Markus, 2004; p. 67-68).

Exchanging support	→	Creating & making idenfication	→	Trust

→ Sense of membership
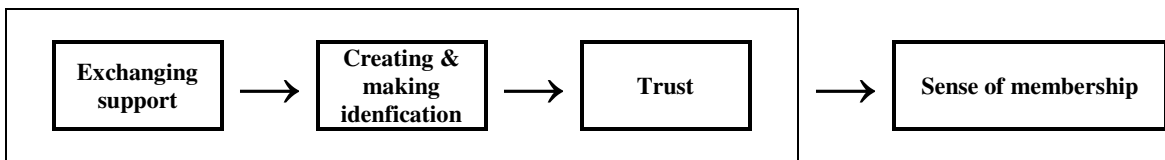
Source: Blanchard & Markus, 2004; p. 76

Figure 5

Process of membership development

Building on Tajfel's (1978) classification scheme, Ellemers et al. (1999) argued that social identification is multi-dimensional with three aspects of self-categorization, group self-esteem, and affective commitment. Emotional group commitment was found to be the main aspect of social identification that affects people's intention to modify their thoughts and behaviors based on their shared value and interests.

- Self-categorization (a cognitive component) – a cognitive awareness of one's membership in a social group.

- Group self-esteem (an evaluative component) – a positive or negative value connotation attached to this group membership.

- Affective group commitment (an emotional attachmet) – a sense of emotional involvement with the group (Ellemers et al., 1999; p. 372).

Once members become attached to their communities, it is expected that they are more likely to not only have a positive attitude, but to adjust their behaviors based on their group values (Dutton et al., 1994). Such greater identification positively affects members' inclination to follow their community values by accepting other members' opinions or suggestions as references (Bagozzi & Dholakia, 2002). More specifically, members with high identification are more likely to purchase proposed services or products in terms of other members' information and suggestions (Oleshen & Grossbart, 1998). They are more apt to participate in community activities with more frequent exchange of information, opinions and experiences with members (Karadas et al., 2003). Highly identified members are also more prone to contribute to the organization with several desirable cooperative behaviors of helping other members and spreading good references (Dutton et al, 1994).

Some recent research viewed identification with the community as an important aspect of a person's community activities. Bagozzi and Dholakia (2002) examined in the virtual community context, that strong identification positively affects an individual's intention to hold a relationship with virtual community members. In a similar vein,

Ellemers et al. (1999) found that even though members view a particular organization as less prestigious, greater identification of members can be nurtured when people voluntarily participate in the group than when randomly assigned to the group. Bergami & Bagozzi (2000), in their study of social identity in a work organization, examined the following sequential relationship: (interaction) → (identification) → (member voluntary behaviors). They suggested that strong interaction with other members enables members to strengthen the psychological attachment to their community, resulting in highly desirable member behaviors (Bhattacharya et al., 1995; Dutton et al., 1994; Koh & Kim, 2004; Okleshen & Grossbart, 1998).

Research model and hypotheses

Research model

      The conceptual model specifying the antecedents, moderator, mediator, and consequences (online travel member voluntary behaviors) of online community activities is presented in Figure 6. Members' involvement with travel, social affiliation, and community benefits are proposed as potential antecedents of community activities. Three general categories of online travel member voluntary behaviors that indicate community success are further introduced: knowledge sharing, community promotion, and behavioral changes.

      Overall, the research model is tested into three sub-models. The first sub-model examines the effects of three antecedents of travel involvement, social affiliation, and community benefits on community interaction, which in turn leads to community identification. It is further tested whether the effects of three antecedents on community interaction vary depending on travel members' observation frequency. Using the sequential relationship of (observation) → (interaction) → (identification), the member participation behavior in online travel community is explored in the second sub-model. It is also investigated whether the effect of member's observation on the member's community identification is fully mediated by the member's interaction level. The third sub-model determines whether members' identification with a chosen online travel community has significant effects on online travel member voluntary behaviors: knowledge sharing, community promotion, and behavioral changes. The potential differences between high interactive members and low interactive members are further tested within the proposed model.

Submodel 1

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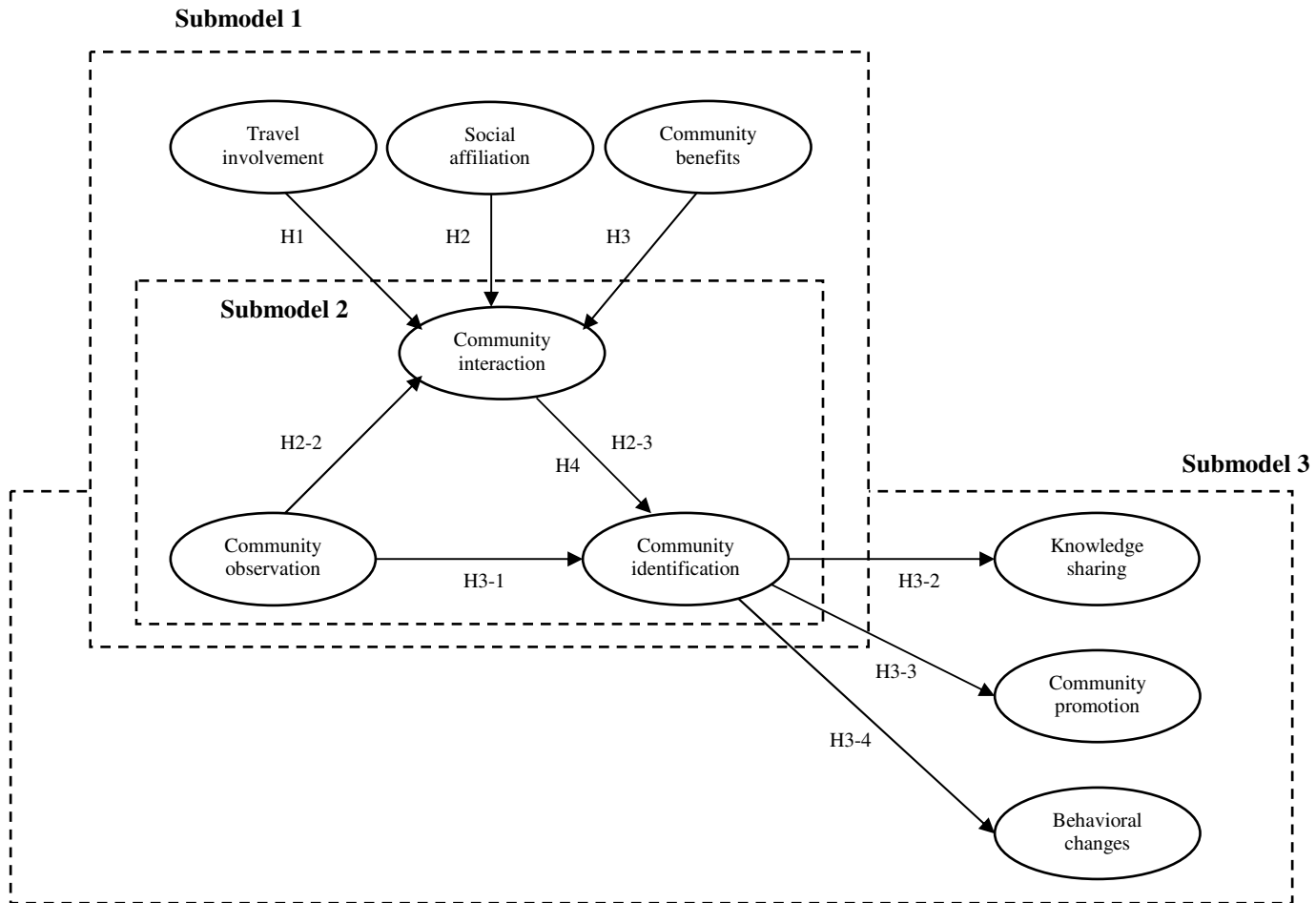
Note: Moderating paths were omitted.

Figure 6

Research model

Research hypotheses

To gain commercial success through increased value of their members, many travel businesses are widely focused on managing an online community in which members communicate around their interest in travel and tourism (Kim et al., 2004, Wang & Fesenmaier, 2004). Under this interactive online environment, travel businesses can usually (1) grasp customers' diverse travel needs through active observation of communication and interactions among members; and (2) exert their influences on individual members through a more specific marketing strategy. Ultimately, they benefit from their ability to have loyal members who voluntarily behave in terms of their shared values and interests. It is thus important to understand what factors encourage people to interact with other members in online communities, given that an online community is a group where people voluntarily become a member and communicate around their shared interest.

Numerous studies suggested that involvement with travel has a significant impact on all aspects of the consumption process (Gursory & McCleary, 2004; Jamrozy et al., 1996; Reid & Crompton, 1993). People with high levels of travel involvement are more likely to participate and interact with other members in the online community. The need for social affiliation has proven to be predictive of various interpersonal relationship behaviors (Bendapudi & Berry, 1997; Bove & Johnson, 2000; Hill, 1987; Mathwick, 2002; Wong & Csikszentmihalyi, 1991). Highly sociable people are more willing to develop interpersonal relationships with like-minded people. Research has also revealed that members' interaction activities are driven by the perceived benefits that they place on online communities (Bove & Johnson, 2000; Kang et al., in press; Okleshen &

Grossbart, 1998; Wang & Fesenmaier, 2004). People who perceive the community

service as satisfying their needs are more prone to communicate with other members

around their areas of interest. Therefore, the hypotheses to be tested in submodel 1 are:

> H1: *Higher levels of travel involvement will lead to higher levels of community*
>
> > *interaction.*
>
> H2: *Higher levels of social affiliation will lead to higher levels of community*
>
> > *interaction.*
>
> H3: *Higher levels of community benefits will lead to higher levels of community*
>
> > *interaction.*

When members frequently interact with like-minded people by sharing their

information or experiences, they are more likely to develop a sense of membership

(Bagozzi & Dholakia, 2002; Gruen et al., 2000). The more members interact around their

shared interests, the more likely they come to view a chosen online community as part of

themselves. The hypothesis to be tested is thus:

> H4: *Higher levels of community interaction will lead to higher levels of*
>
> > *community identification.*

Some recent studies also suggested that more frequent observers are more

receptive to the community value and are more prone to give priority to the value of their

community. It is thus clear that online travel members with frequent observation are

more likely to interact with other travel members, since they can evaluate the community

service more exactly (Bendapudi & Berry, 1997). From this view, online traveler's

observation frequency is hypothesized to strengthen the effects of travel involvement, social affiliation, and community benefits on interaction activities. The related hypotheses are as follows:

H5: *The positive influence of travel involvement on community interaction will be greater among those with more frequent observation than among those with less frequent observation.*

H6: *The positive influence of social affiliation on community interaction will be greater among those with more frequent observation than among those with less frequent observation.*

H7: *The positive influence of community benefits on community interaction will be greater among those with more frequent observation than among those with less frequent observation.*

Starting with the sequential relationship of (observation) → (interaction) → (identification) (Bergami & Bagozzi, 2002; Kozinets, 1999; Walther, 1995; Wang & Fesenmaier, 2004), the role of community interaction in understanding member participation behavior in the online travel community is first investigated in submodel 2. Community interaction is hypothesized to mediate relationships between community observation and community identification. Thus, the following hypothesis is proposed:

H2-1: *The member's interaction level will fully mediate the relationship between the member's observation and the member's community identification with a chosen online travel community.*

Millions of people join online travel communities to derive various values from the online community experience. By participating in a particular online travel community, people have the opportunity to share valuable information or knowledge and to forge closer relationships with other members who have similar interests in travel (Hagel, 1999; Kim et al., 2004).

In understanding members' participation behaviors, many researchers suggested that such participation behavior is multiple levels of activity which occurs sequentially. It is generally suggested that members' main focus shifts from information gathering to social relationship building (Kozinets, 1999). When they first enter an online community, travel members tend to observe community activities without explicit interactions to judge the community service more exactly (Langerak et al., 2003; Wang & Fesenmaier, 2004). Once they view community services as valuable through their observation, travel members are more apt to engage in ongoing communication with other members (Ahuja & Galvin, 2003; Langerak et al., 2003; Wang & Fesenmaier, 2004). Such frequent interactions with other members can well lead to an intended sense of membership. Members identify themselves as a member of a chosen online community through their active interaction activities in the community. They come to see the online community as part of themselves (Dutton et al., 1994). Thus, the following hypotheses are proposed in submodel 2:

> H2-2: *Higher levels of community observation will lead to higher levels of community interaction.*
>
> H2-3: *Higher levels of community interaction will lead to higher levels of community identification.*

Given that members' community participation in the community starts with their active observation activities, members' observation activities have been widely explored as an acceptable part of an online community (Okleshen & Grossbart, 1998; Ridings & Gefen, 2004). Such observation activities empower members to evaluate the community service more exactly and further determine the types of benefits they will obtain from their community interaction (Holland & Baker, 2001). More active observers are thus more likely to be affected by their community's shared value and interest, by developing confidence in obtained information; even though they do not contribute strongly to ongoing interactions with other members (Ardichivili et al., 2003; Ridings and Gefen, 2004; Takahashi et al., 2003; Thorbjørnsen et al., 2002). Thus, the hypothesis to be tested in submodel 3 is:

> H3-1: *Higher levels of community observation will lead to higher levels of community identification.*

Numerous studies suggested that if members become psychologically attached to the community, they are more likely to behave in terms of their community values (Bergami & Bagozzi, 2000; Gruen et al., 2000; McWilliam, 2000). Strong identification positively increases members' propensity to acknowledge their community values by (1) sharing valuable information or experiences with other members (Ardichvili et al., 2003; Koh & Kim, 2004); (2) spreading the word about their community service (Bendapudi & Berry, 1997; Bettencourt, 1997; Gruen et al., 2000); and (3) modifying their consumption behaviors (Bagozzi & Dholakia, 2002; Kim et al., 2004; Okleshen & Grossbart, 1998). The related hypotheses are thus:

H3-2: *Higher levels of community identification will lead to higher levels of knowledge sharing.*

H3-3: *Higher levels of community identification will lead to higher levels of community promotion.*

H3-4: *Higher levels of community identification will lead to higher levels of behavioral changes.*

Travel members with different levels of interaction show a different magnitude of membership behaviors, even though favorable membership behaviors evidently appear when they develop "virtual identities" that empower members to view themselves as a member of a given community. Recent studies have suggested that the relationship between members' identification and their voluntary member behavior might vary depending on a member's interaction frequency (Ahuja & Galvin, 2003; Langerak et al., 2003; Okleshen & Grossbart, 1998). They revealed that the greater the level of a member's interaction frequency, the greater the positive relationship between community identification and voluntary membership behaviors. Submodel 3 proposes that the magnitudes of the hypothesized relationships might differ by a member's interaction level. The final hypothesis therefore is as follows:

H3-5: *The positive influence of community observation on community identification will be greater among those with more frequent interaction than among those with less frequent interaction.*

H3-6: *The positive influence of community identification on knowledge sharing will be greater among those with more frequent interaction*

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than among those with less frequent interaction.

H3-7: *The positive influence of community identification on community promotion*

will be greater among those with more frequent interaction

than among those with less frequent interaction.

H3-8: *The positive influence of community identification on behavioral changes*

will be greater among those with more frequent interaction

than among those with less frequent interaction.

CHAPTER III

METHODOLOGY

Sample and data collection

Data were collected from members of online travel communities by conducting

web-based online survey. MSN USA is secured as the research site, since it is the

world's leading provider of internet services including online community service. MSN

maintains a great number of 400 million users and operates in 42 countries (Hoovers,

2005; Preece, 2001). Focusing on the online community service, MSN enables members

who have the same interests to share their information and knowledge. Several different

types of online communities such as chat rooms, bulletin boards, newsgroups, and instant

messaging can be reached by potential travelers who have specific interest in travel and

tourism (Pack, 2003).

Given the sample of this study is online travel community members, a web-based

online survey was adopted as a survey method. A web-based online survey method does

have advantages over the traditional paper-based survey: (1) lower costs; (2) less time

consuming; (3) easier to execute; and (4) geographically unrestricted sample (Koh &

Kim, 2004; Schonlau, 2002).

A convenience sampling procedure was used in this study, based on several

previous studies which suggested that true interaction between members should be

guaranteed by including only active online communities in the survey (e.g., Ridings et al.,

2002; Ridings & Gefen, 2004; Wang & Fesenmaier, 2004). To include only those online travel communities with large member involvement, 94 highly active travel-related groups were chosen for this study based on their activity level provided by MSN. To encourage participant response to the survey, the managers of each group were contacted prior to the study. Of those contacted, 37 community managers showed their support for the survey (37 out of 94). The survey was posted to each group's bulletin or message board with a request for participation, an introduction explaining the purpose of the survey, and the link to the web-based survey. Community managers encouraged their members to participate in the survey. Respondents were asked to complete the self-administered web questionnaire based on their community experience as a member. Members' participation made them eligible for a drawing to win a $100 gift card. Their responses were automatically stored in the database created for this purpose. A total of 384 community members from 37 travel-related communities responded to the survey. Of these, 32 were eliminated due to incomplete responses, resulting in a usable sample of 352 responses.

Since the sample was self-selected, demographic profiles of the sample were compared with those of known population data of online community members to examine whether the sample of this study is representative of general online community members (Mathwick, 2002; Wang & Fesenmaier, 2004). The demographics of the sample were quite similar to overall online community member population, indicating that people who are young, have obtained more education, and earn higher levels of income are more likely to join online communities to communicate around a shared interest (Pew Research Center, 2001).

The instruments of the study were developed based on the relevant literature and the results of prior interviews with the five online travel community members. Prior to the main survey, both a pre-test and a pilot test were conducted to determine the validity of the instrument. For the pre-test, four academics were asked to rate the appropriateness of the items in each scale, the length of the instrument, and the format of the scales. Some items were revised and some measures' scale formats were changed. After completing the pre-test, 50 community members were randomly selected for the pilot test. They were asked to evaluate the relevance of the items for the member of online travel community. Based on feedback received, some changes were also made to the questionnaires.

Detailed sample characteristics are shown in Table 6. Of the 352 respondents, 55.7% were male and 44.3% were female. The majority of the respondents' ages fell within a range of 20 to 49 years old (90.3%). Approximately two-thirds (62.8%) of respondents had earned a college degree and 67.9% of them had an annual income of more than $40,000. According to the data collected, online travel community membership continues to increase. A large majority of respondents (80.7%) had been a member of a particular online travel community for one or more years, while only 19.3% had less than one year of membership. In regards to membership activity, most respondents were online travel community savvy participants who actively interact as is demonstrated by the 75.3% of respondent who visited the online community every day and spent 1 hour or more per visit. More than two-thirds (66.5%) of respondents surf more than one online travel community while the remaining 33.5% had only participated in a single online group.

Table 6

Demographic characteristics of respondents (n = 352)

Variable	Frequency	Percent (%)
Gender		
Male	196	55.7
Female	156	44.3
Age		
Under 20	2	.6
20 - 29	75	21.3
30 - 39	171	48.6
40 - 49	72	20.5
50 or older	32	9.1
Education		
High school or less	40	11.4
Some college	91	25.9
College graduate	158	44.9
Post graduate studies	63	17.9
Annual income		
Less than $40,000	113	32.1
$40,000 - $69,999	187	53.1
$70,000 - $99,999	31	8.8
$100,000 or more	21	6.0
Duration of membership		
Less than 12 months	68	19.3
12 - 24 months	103	29.3
25 - 36 months	88	25.0
Over 36 months	93	26.4
Hours of community activities per day		
Less than 1 hour	87	24.7
1 - 2 hours	222	63.1
2 - 3 hours	27	7.7
Over 3 hours	16	4.5
Number of membership		
1membership	118	33.5
2 - 3 memberships	126	35.8
4 - 5 memberships	70	19.9
Over 5 memberships	38	10.8

Measures

Based on the relevant literature, multi-item scales were developed for each of the following constructs: (1) travel involvement; (2) social affiliation; (3) community benefits; (4) observation frequency; (5) community interaction; (6) community identification; (7) knowledge sharing; (8) community promotion; and (9) behavioral changes. All of the measurement items were measured using a five point Likert scale, with 1 being strongly disagree to 5 being strongly agree. Cho's (2003) five items were employed in order to measure people's involvement with travel. Respondents were asked how they consider travel and leisure to be important and relevant based on inherent needs, values, and interests. For social affiliation, a personal tendency to establish and maintain a positive affective relationship with others was asked using four items adapted from Hill (1987). The community benefits construct was measured with three items adapted from Srinivasan et al. (2002) where subjects were asked how they value the community activities. Community observation was assessed using two items from Ridings et al. (2002) to assess member's lurking behavior in a positive sense. Community interaction was measured with three items adapted from Okleshen and Grossbart (1998), including community members' active interaction with other members. Four items from Carlson's (2005) measure were used to assess community identification. The respondents were asked to indicate the degree to which they see the community as part of themselves.

Knowledge sharing was measured by three items developed by Koh and Kim (2004) where respondents were asked to indicate the level of their willingness to share their information or experiences with other members. Community promotion was

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assessed using three items adapted from Kang et al. (in press). One item from

Mathwick's (2002) measure was included to estimate the degree of member's promotion

intention. The behavioral changes construct was measured by four items developed by

Okleshen and Grossbart (1998). Respondents were asked to indicate the extent to which

they modify their consumption behaviors based on the community value.

Data analysis

Using LISREL 8.5 (Jöreskog & Sörbom, 1996), a structural model was analyzed

and the path coefficients were estimated. Unlike other statistical methods, structural

equation modeling (SEM) tests the model paths and model fit. SEM also allows

assessment of complex interrelated dependence relationships and incorporates the effects

of measurement error on the structural coefficients (Hair, Anderson, Tatham, & Black,

1998). In structural equation modeling, the structural parameters do not coincide with

coefficients of regressions among observed variables, for each equation represents

relatively invariant features of mechanism that generates the observed variables. The

structural model is examined in terms of model goodness-of-fit, overall explanatory

power, and postulated causal links. In general, structural equation modeling gives the

better information than conventional multivariate techniques: (1) by taking into account

measurement errors in the observed variables; (2) by allowing for modeling based on

both latent (unobservable) variables and manifest (observable) variables; and (3) by

accommodating the simultaneous estimation of multiple interrelated dependence

relationships among the observed variables (Hair et al., 1998).

Table 7

Five steps in structural equation modeling

Model specification
- Specify theoretical model through a review of the research literature
- Develop the theory-based hypotheses
- Check specification error (the omission of one or more key predictive variables)

↓

Identification
- Determine whether the data information is sufficient for parameter estimation

$$t \leq (p + q)(p + q + 1)/2,$$

  where: t = the number of parameters to be estimated

         p = the number of y-variables

         q = the number of x-variables

- Determine the degrees of freedom
- Diagnosis and remedy of identification problems

↓

Estimation
- Minimize the differences between sample covariance matrix (S) and the implied covariance matrix (Σ)
- Measure several fitting functions or estimation procedures

↓

Testing fit
- Interpreting model fit / comparing fit indices for alternative or nested models
- Overall model fit measures
  - Absolute fit (χ^2, GFI, RMR, RMSEA, etc),
  - Incremental fit (AGFI, TLI, NFI, etc), and
  - Parsimonious fit (Normed χ^2, PNFI, AIC, etc)
- Measurement model fit (Composite reliability (ρ_c), Variance extracted (ρ_v))

↓

Respecification
- Consider modification indices
- Identify potential model changes

Sources: Diamantopoulos & Siguaw (2000); Hair et al. (1998); Schumacker & Lomax (1996)

Following the two-step approach recommended by Anderson and Gerbing (1988), the measurement model was first estimated and the measurement and structural model were then estimated simultaneously. The measurement model provide an assessment of convergent and discriminant validity, whereas the structural model assess the predictive validity (Anderson & Gerbing, 1988). Hair et al. (1998; p. 600) summarized two-stage approach by comparing it with single-stage approach:

> The rational of this approach is that accurate representation of the reliability of the indicators is best accomplished in two steps to avoid the interaction of measurement and structural models. Although we cannot truly evaluate the measurement and structural models in isolation, we must consider the potential for within-construct versus between-construct effects in estimation (interpretational confounding). A single-step analysis with the simultaneous estimation of both structural and measurement model is the best approach when the model possesses both strong theoretical rationale and highly reliable measures, resulting in more accurate relationships and decreasing the possibility for the structure or measurement interaction. However, when faced with measures that are less reliable, or theory that is only tentative, the researcher should consider a staged approach to maximize the interpretability of both measurement and structural models (Hair et al., 1998; p. 600).

> The testing of the structural model, i.e., the testing of the initially specified theory, may be meaningless unless it is first established that the measurement model holds. If the chosen indicators for a construct do not measure that construct, the specified theory must be modified before it can be tested. Therefore, the measurement model should be tested before the structural relationships are tested. It may be useful to do this for each construct separately, then for the constructs taken two at a time, and then for all constructs simultaneously. In doing so, one should let the constructs themselves be freely correlated, i.e., the covariance matrix of the constructs should be unconstrained (Jöreskog & Sörbom, 1993; p. 113).

Measurement model

The overall measurement quality was assessed using confirmatory factor analysis (CFA) (Anderson & Gerbing, 1992). A reliability test (Cronbach's alpha) is performed to purify the measurement scale for each construct. The composite reliability (ρ_c) and variance-extracted scores (ρ_c) were additionally tested according to the suggestions by Gerbing and Anderson (1988). Measures of fit are used to asses the models tested in this study: conventional chi-square test (χ^2), goodness-of-fit index (GFI), comparative fit index (CFI), Tucker-Lewis index (TLI), normed fit index (NFI), root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR).

> The measurement model specifies how the latent variables or hypothetical constructs are measured in terms of the observed (measured) variables and describes their measurement properties (reliability and validity) (Schumacker & Lomax, 1996; p. 50).

Validity and reliability

This study used four validity concerns, content validity, convergent validity, discriminant validity, and reliability (internal consistency) for empirical test of the instrument. Content validity deals with how well the proposed measurement items accurately represent the constructs that they are intended to measure (Hair et al., 1998). It was assessed by examining the process by which scale items are generated (development of the measure from the literature, initial pretest, and pilot test of the measure). Convergent validity refers to the degree to which measures of constructs that should be related to each other are to be related to each other (Hair et al., 1998). Convergent validity was basically tested by confirmatory factor analysis (CFA).

Discriminant validity is defined as the degree to which measures of different concepts are distinct: if two or more concepts are unique, then measures of each should not correlate well. Discriminant validity was checked through CFA and comparison of the variance-extracted (ρ_c) and the squared latent factor correlation between a pair of constructs. Reliability is related to the degree to which the measurement items yields consistent and identical results over repeated measures (Hair et al., 1998). Reliability was assessed by computing Cronbach's Alpha, the composite reliability (ρ_c), and variance-extracted scores (ρ_c).

- Validity – Extent to which a measure or set of measures correctly represents the concept of the study – the degree to which it is free from any systematic or non-random error. Validity is concerned with how well the concept is defined by the measure(s), whereas reliability relates to the consistency of the measure(s).

- Reliability – Extent to which a variable or set of variables is consistent in what it is intended to measure. If multiple measurements are taken, reliable measures will all be very consistent in their values. It differs from validity in that it does not relate to what should be measured, but instead to how it is measured (Hair et al., 1998; p. 90).

Structural model

The hypothesized relationships in the model are tested simultaneously using structural equation modeling. Following Anderson and Gerbing (1988), all indicators in the respecified measurement model are used in the simultaneous estimation of the measurement and structural models.

The structural equation model specifies the direct and indirect relationships among the latent

variables and is used to describe the amount of explained and unexplained variance (Schumacker

& Lomax, 1996, p. 50).

Table 8

Types of Goodness-of-fit criteria and acceptable fit interpretation

Goodness-of-fit	Acceptable level	Interpretation
Measures of absolute fit		
Chi-square (χ^2)	Tabled χ^2 value	Compares obtained χ^2 value with table value for given df.
Goodness-of-fit (GIF)	0 (no fit) to 1 (perfect fit)	Value close to .90 reflects a good fit.
Root-mean-square residual (RMR)	Researcher defines level	Indicates the closeness of Σ and S matrix.
Standardized RMR (SRMR)	< .05	Value less than .05 is indicative of acceptable fit.
Root-mean-square error of approximation (RMSEA)	< .05	Value less than .05 indicates a good model fit, between .05 and under .08 of reasonable fit.
Incremental fit measures		
Adjusted GFI (AGFI)	0 (no fit) to 1 (perfect fit)	Value adjusted for df, with .90 a good model fit
Tucker-Lewis index	0 (no fit) to 1 (perfect fit)	Value close to .90 reflects a good model fit.
Normed fit index (NFI)	0 (no fit) to 1 (perfect fit)	Value close to .90 reflects a good model fit.
Comparative fit index (CFI)	0 (no fit) to 1 (perfect fit)	Value close to .90 reflects a good model fit.
Parsimonious fit measures		
Parsimonious NFI (PNFI)	It varies from 0 to 1, with 1 = perfect fit.	No recommended levels of acceptable fit. Higher values are better.
Normed chi-square	1.0 to 5.0	Less than 1.0 is a poor model fit. Higher than 5.0 reflects a need for improvement.
Akaike information criterion (AIC)	0 (perfect fit) to positive value (poor fit)	Compares values in alternative models

Sources: Schumacker & Lomax, 1996; p. 121

Moderation tests

The existence of moderating effects was estimated by a multigroup approach, given that multigroup approach is one of the most useful procedures for testing the latent variable interaction effects, under the widest set of circumstances (Rigdon, Schumacker, and Wothke, 1998). Namely, multigroup approach is traditionally used if one or both of the effect variables in a model is discrete or categorical (Rigdon et al., 1998). To this end, the sample is first divided into low and high levels of interaction. Only the hypothesized structural paths are allowed to vary across the low and high interaction subgroups and the fit of this model is compared within which the structural paths are constrained to be equal across the two subgroups (Donovan, Brown, & Mowen, 2004; Kohli, Shervani, & Challagalla, 1998; Rigdon et al., 1998). The χ^2 difference between the baseline model and the constrained model is performed in order to test moderation effect of interaction frequency.

> The basic logic is that if interaction effects are present, then certain parameters should have different values in different samples. Both main effects and interaction effects can be determined by using different samples to estimate the intercept and regression slopes. A χ^2 difference test can determine whether a main-effect difference in the groups exists, as well as whether regression coefficients are equal or parallel. Since the two models are nested, a χ^2 difference test with one degree of freedom is computed (Schumacker & Lamax, 1996; p. 216).

> In the multisample approach, the different samples are defined by the different levels of one or both of the interacting variables. If interaction effects are present, then certain parameters should have different values in different samples……. Under the multisample approach, researchers investigate interaction effects using chi-square difference tests. Researchers first estimate a model where the parameters in questions are constrained to be equal across the groups, and then estimate

a model where the parameters are allowed to differ in the two samples. A significant chi-square difference suggests that the equality constraints are not consistent with the data, and thus that an interaction effect exists (Rigdon et al., 1998; p. 3-4).

Mediation tests

The approach to mediation testing is consistent with other studies examining mediation hypotheses (i.e., Bergami & Bagozzi, 2000; Boles, Babin, Brashear, Brooks, 2001; Brown, Mowen, Donavan, & Licata, 2002). The model comparison should focus on assessing model fit and compare the fit of competing and theoretically plausible models (Kelloway, 1998). Since the first model is nested within the second, a chi-square difference test is used formally to ascertain mediation effect of identification. In addition, four different criteria suggested by Morgan and Hunt (1994; p. 30) are considered in case of the lack of a chi-square difference between two models.

- overall fit of the model as measured by CFI;
- percentage of the model's hypothesized parameters that are statistically significant;
- amount of variance explained as measured by squared multiple correlation; and
- parsimony, as measured by the parsimonious normed fit index (PNFI).

The model comparison should be understood within competing models strategy. Hair et al. (1998; p. 579) stated that in an attempt to examine that no better-fitting model exists, the proposed model and several alternative models could be compared, indicating that acceptable fit alone does not guarantee that another model will not fit better or

equally well. Competing models are principally nested models, in which the number of

constructs and indicators remains constant, but the number of estimated relationships

changes. Chi-square difference tests are normally performed between the nested models.

Diamantopoulos and Siguaw's (2000; p. 122) following example in which M1 is nested

within M2 and M2 is nested within (can be obtained from) M3 shows how a series of

model comparison can be conducted based on chi-square difference tests.

Comparison	Chi-square difference test	Degree of freedom
M1– M2	$\chi_1^2 - \chi_2^2$	$df_1 - df_2$
M2– M3	$\chi_2^2 - \chi_3^2$	$df_2 - df_3$
M1– M3	$\chi_1^2 - \chi_3^2$	$df_1 - df_3$

CHAPTER IV

FINDINGS

Submodel 1

Study introduction

With the increasing popularity of online communities, many business firms have widely focused on managing an online community in which people interact around a shared interest (Dholakia et al., 2004; McWilliam, 2000). Well-established online communities not only fortify traditional business functions, but also have potential to increase business performances (Hagel, 1999; McWilliam, 2000). Specifically, business firms can understand customers' needs and the current trends in their business by referring to members' active communication and interactions. Given that members have a narrow interest, they can also employ a more specific marketing strategy (Ridings & Gefen, 2004). Further, business firms can also influence members' decision-making process, because members are more flexible to modify their behaviors in terms of the community value (Gruen et al., 2000).

Given that an online community is a group where people voluntarily become a member and interact with other members, such potential benefits of an online community can be achieved only when (1) members actively interact with like-minded people by sharing their information or experiences (Okleshen & Grossbart, 1998); and (2) develop a sense of belonging to the community (Bagozzi & Dholakia, 2002; Gruen et al., 2000).

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Thus, it is important to understand what factors encourage people to interact with other members in online communities. Active interactions around a shared interest would consequently lead to members' attachments to a certain online community.

The purpose of submodel 1 is to identify significant factors influencing online travel community members to interact with other members around their shared interests. This study further investigates how the positive effects of proposed antecedents on community interaction activities are influenced by the strength of online member's observation frequency, given that members with frequent observation are more inclined to communicate around their shared interest (Ahuja & Galvin, 2003; Okleshen & Grossbart, 1998; Ridings & Gefen, 2004). Travel business firms can make more successful marketing decisions in managing online communities through a better understanding of members' interaction activities in the online travel community.

Supplementary backgrounds

Observation frequency

Not all members show the same level of the active interaction activities with other travel members, even though the level of a travel member's travel involvement, inherent social affiliation, and perceived travel community benefits are critical to the success of an online travel community (Kim et al., 2004; Okleshen & Grossbart, 1998). Newcomers who passively observe the community activities without participating, become more frequent participants as they feel more comfortable in a chosen travel community (McWilliam, 2000; Rothaermel & Sugiyama, 2001; Wang & Fesenmaier, 2004). More frequent observers are more receptive to the community value and are more prone to give

priority to the value of their community. It is thus clear that online travel members with

frequent observation are more likely to interact with other travel members, since they can

evaluate the community service more exactly (Bendapudi & Berry, 1997). From this

view, travel members' observation frequency is supposed to fortify the effects of three

antecedents (i.e., travel involvement, social affiliation, and community benefits) on

community interaction.

Measurement model

The adequacy of the measurement component of the proposed model was first

examined by performing confirmatory factor analysis. Model fit for the measurement

model was good (χ^2 = 360.73, df = 123, $p < .001$; comparative fit index [CFI] was = .97;

goodness-of-fit index [GFI] = .90; standardized root mean residual [SRMR] = .052;

normed fit index [NFI] = .96; Tucker-Lewis index [TLI] = .96).

Because the proposed measurement model achieved an acceptable fit, each of the

constructs was evaluated by (1) examining the statistical significance of each estimated

loading and (2) assessing the reliability coefficients of the studied constructs (see Table

9). Significant factor loadings for a specified construct provide evidence of convergent

validity, suggesting that items for valid measures of the same concept are at least

moderately correlated among themselves (see Table 9). All indicators loaded

significantly on their specified construct with the lowest t-value being 12.97 ($p < .001$),

which suggests that means the specified indicators are sufficient in their representation of

the constructs (Hair et al., 1998). In addition, convergent validity can be achieved when

item-to-total correlation scores exceed the commonly recommended .40 threshold (Kline, 1986). All scores surpassed the recommended level.

The construct's reliability for each construct was then assessed. An examination of construct's reliability indicated that the αs were all above Nunnally's (1978) recommended .70 threshold (see Table 9). The composite reliability indices (ρ_c) of each scale were all greater than Bagozzi's (1980) recommended level of .70 and all variance-extracted scores (ρ_v) were also .55 or higher and exceeded the .50 cutoff recommended by Fornell and Lacker (1981), which suggests that the measures are internally consistent (see Table 10).

Discriminant validity is established when measures for different constructs are not strongly correlated among themselves. Evidence of discriminant validity comes from the fact that the variance-extracted (ρ_v) for a specified construct exceeds the squared latent factor correlation (Φ) between a pair of constructs (Fornell & Lacker, 1981). None of the squared correlations surpassed the variance-extracted (ρ_v), indicating measures that should not be related are in reality not related (see Table 10). Taken together, these results demonstrate that the proposed measurement model is appropriate for further analysis.

Table 9

Submodel 1: Measurement parameter estimates

Construct and indicator	Standardized loading	*t*-value	Error variance (δ)	Item-to-total correlation	Item reliability
Travel involvement (α = .90)					.94[a]
In general, I am interested in overseas travel.	.74	15.83	.45	.71	.55
Overseas travel is important to me.	.92	22.19	.15	.86	.85
I am involved with overseas travel.	.89	20.84	.21	.83	.79
Overseas travel is relevant to me.	.81	18.01	.34	.77	.66
Social affiliation (α = .85)					.81[a]
I think being close to others and relating to them is one of my favorite things.	.74	14.21	.46	.75	.54
I like to be around others and socialize with them.	.77	15.00	.40	.79	.60
I feel like I have really accomplished something valuable when I am able to get close to someone.	.77	15.08	.40	.64	.60
I prefer being with others rather than being alone.	.67	12.97	.55	.58	.45
Community benefits (α = .84)					.85[a]
Members share knowledge or experiences with other members of the online travel community.	.82	17.46	.33	.72	.67
The online travel community is useful for gathering information.	.86	18.63	.27	.75	.73
Members benefit from the online travel community.	.74	15.40	.45	.67	.55
Community interaction (α = .91)					.88[a]
I participate in the online travel community activities.	.88	20.40	.31	.83	.69
I interact with my travel community members.	.87	19.34	.24	.79	.76
I am active in the online travel community.	.86	21.51	.25	.84	.75
Community identification (α = .87)					.86[a]
I feel strong ties to other members.	.79	16.74	.38	.69	.62
I find it easy to form a bond with other members.	.77	15.88	.40	.76	.60
I feel a sense of community with other members.	.83	17.62	.31	.80	.69
A strong feeling of camaraderie exists between me and other members.	.76	16.45	.41	.66	.59

Note 1: N = 352; All *t*-values are significant at *p* < .001.

a. Composite reliability (ρc)

Table 10

Submodel 1: Descriptive statistics and correlation estimates (Φ)

Variable	Mean	SD	(1)	(2)	(3)	(4)	(5)	Variance Extracted (ρ_v)
(1) Travel involvement	4.33	.70	-					.71
(2) Social affiliation	3.77	.69	.18	-				.51
(3) Community benefits	3.80	.62	.33	.52	-			.65
(4) Community interaction	3.71	.88	.40	.46	.58	-		.71
(5) Community identification	3.41	.82	.36	.53	.60	.76	-	.61

Note 1: N = 352; All correlations are significant at $p < .01$.

Structural model

The full structural model shown in Figure 7 was derived from hypotheses, since the proposed measurement relationships were consistent with the data. The model achieved a good level of fit: $\chi^2 = 378.02$, df = 125, $p < .001$; CFI = .97; GFI = .90; SRMR = .060; NFI = .96; TLI = .96. As was expected, all structural path estimates were significant. The signs of all structural paths were also consistent with the hypothesized relationships among the latent variables. Moreover, the predictors accounted for a substantial proportion of the variance in two endogenous variables. The three antecedents (i.e., travel involvement, social affiliation, and community benefits) of community activities explained 47% of the variance in community interaction and 64% of the variance in community identification.

H1, H2, and H3 postulated the positive relationships between three antecedents of community activities and community interaction. Travel involvement (standardized $\gamma_{11} = .22$, $p < .001$), social affiliation (standardized $\gamma_{12} = .26$, $p < .001$), and community benefits (standardized $\gamma_{13} = .40$, $p < .001$), all had significant effects on community

interaction. Thus, all three hypothesized relationships (H1, H2, and H3) were confirmed

by the data.

H4 posited the positive relationship between community interaction and

community identification. Community interaction (standardized β_{21} = .80, $p < .001$) had

significant effect on community identification. Thus, H4 was also supported.

Table 11

Submodel 1: Structural path estimates

Path To	Path From		H_0	Standardized estimate	t-value
γ paths					
Community interaction	Travel involvement	(γ_{11})	H1	.22	4.32***
	Social affiliation	(γ_{12})	H2	.26	4.21***
	Community benefits	(γ_{13})	H3	.40	6.16***
β path					
Community identification	Community interaction	(β_{21})	H4	.80	12.81***
Model fit indices					
χ^2= 378.02, df = 125, $p < .001$; CFI = .97; GFI = .90; SRMR = .060; NFI = .96; TLI = .96					

Note: R^2 for community interaction = 47%; R^2 for community identification = 64%
*$p < .05$; **$p < .01$; ***$p < .001$
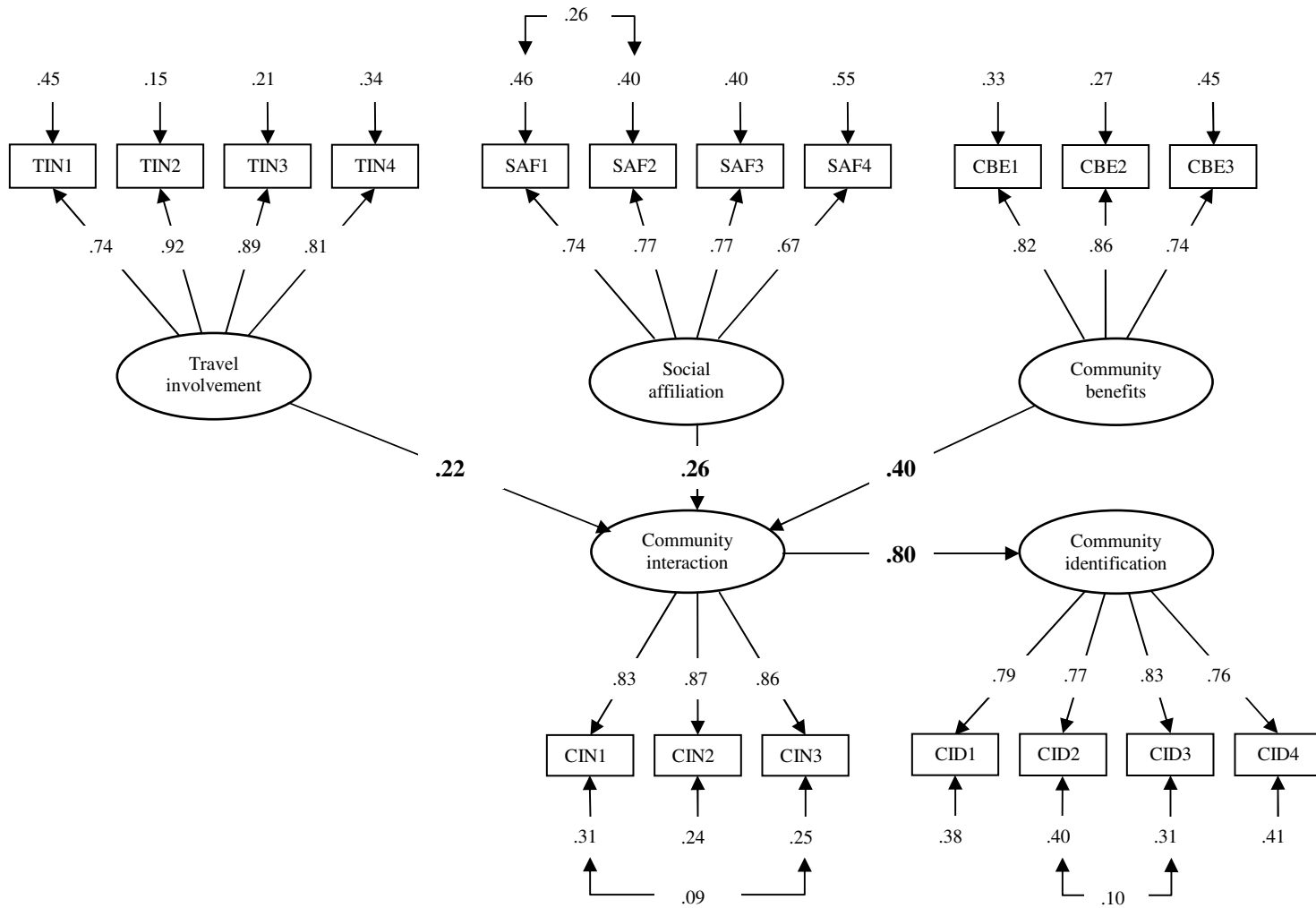
Figure 7

Submodel 1: Standardized structural path coefficients

Moderation tests

The existence of moderating effects was estimated by a multigroup approach, given that multigroup approach is one of the most useful procedures for testing the latent variable interaction effects, under the widest set of circumstances (Rigdon et al., 1998). The sample was split at the mean of member's observation frequency level to form two subgroups that represent low and high observation frequency groups. This gives 177 cases in the low groups and 175 cases in the high group. To assess how some of the hypothesized relationships vary according to member's observation frequency level, two subgroup models were tested and compared. More specifically, the baseline model in which all hypothesized structural paths are allowed to vary across the low and high observation frequency subgroups was first estimated, and the constrained model in which only the hypothesized structural paths are constrained to be equal across the two subgroups were compared (Jöreskog & Sörbom, 1993). Because the two models are nested, the resulting one degree of freedom χ^2 difference test provides a statistical test for moderating effect of observation frequency. A significant chi-square difference suggests that the equality constraints are not consistent with the data, and thus that a moderating effect exists (Hair et al., 1998; Rigdon et al., 1998).

The results show that the effects of travel involvement and social affiliation on community interaction did not differ across the two subgroups ($\Delta\chi^2 = .84$, df = 1, n.s.; $\Delta\chi^2 = 3.47$, df = 1, n.s.), thus not supporting H5 and H6. However, H7 was supported because the χ^2 difference between the baseline model ($\chi^2 = 939.82$, df = 273, $p < .001$) and the constrained model ($\chi^2 = 946.00$, df = 274, $p < .001$) is significant ($\Delta\chi^2 = 6.18$, df = 1, $p < .05$). As was expected, high observed members (standardized $\gamma_{13} = .63$, $p < .001$)

displayed a stronger positive relationship between community benefits and community

interaction than did low observed members (standardized $\gamma_{13} = .34$, $p < .001$).

Table 12

Submodel 1: Results of moderating effects of observation frequency

Path to	Path from		H_0	Standard estimate (*t*-value)	
				High observation (n = 175)	Low observation (n = 177)
Community interaction	Travel involvement	γ_{11}	H5	.26 (3.49) ***	.17 (2.38) *
	Social affiliation	γ_{12}	H6	.23 (3.25) **	.03 (.37) n.s.
	Community benefits	γ_{13}	H7	.63 (6.88) ***	.34 (4.49) ***

* $p < .05$; ** $p < .01$; *** $p < .001$; n.s. = non significant

A series of chi-square difference tests

This section shows a more detailed process of several χ^2 difference tests. To

assess how hypothesized relationships vary according to member's observation

frequency, a series of χ^2 difference tests was performed between the free model (M_f) in

which all structural paths were permitted to vary across the low and high interactive

groups and three constrained models ($M_{c1} - M_{c3}$) in which only one hypothesized

structural path were constrained to be equal across the two groups.

M_f : All hypothesized relationships were permitted to vary across the two groups.

M_c : The following paths were constrained to be equal across the two groups.

- M_{c1} : The path from travel involvement to community interaction was

    constrained to be equal across the two groups.

- M_{c2} : The path from social affiliation to community interaction was constrained to be equal across the two groups.

- M_{c3} : The path from community benefits to community interaction was constrained to be equal across the two groups.

1. $M_{c1} - M_f$

   a. $\Delta\chi^2 = 940.66 - 939.82 = .84$

   b. $\Delta df = 274 - 273 = 1$

   c. $\Delta\chi^2_{(1)\,crit} = 3.84\ (p = .05)$

   d. The chi-square (χ^2) difference is nonsignificant, indicating that the effect of travel involvement on community interaction does not vary across the two groups.

   e. The model with unequal slope (M_f) yields $\gamma_{High} = .26\ (t = 3.49)$ and $\gamma_{Low} = .17\ (t = 2.38)$.

2. $M_{c2} - M_f$

   a. $\Delta\chi^2 = 943.29 - 939.82 = 3.47$

   b. $\Delta df = 274 - 273 = 1$

   c. $\Delta\chi^2_{(1)\,crit} = 3.84\ (p = .05)$

   d. The chi-square (χ^2) difference is nonsignificant, indicating that the effect of social affiliation on community interaction does not vary across the two groups.

   e. The model with unequal slope (M_f) yields $\gamma_{High} = .23\ (t = 3.25)$ and $\gamma_{Low} = .03\ (t = .37)$.

3. $M_{c3} - M_f$

    a. $\Delta\chi^2 = 946.00 - 939.82 = 6.18$

    b. $\Delta df = 274 - 273 = 1$

    c. $\Delta\chi^2_{(1)\ crit} = 3.84\ (p = .05)$

    d. The chi-square (χ^2) difference is significant, suggesting that the effect of community benefits on community interaction varies across the two groups.

    e. The model with unequal slope (M_f) yields $\gamma_{High} = .63$ ($t = 6.88$) and $\gamma_{Low} = .34$ ($t = 4.49$).

Table 13

Submodel 1: Results of a series of chi-square difference tests

Model			Chi-square statistic		Testing equality of slope	
Path to	Path from					
M_f: Free model			$\chi^2(273) = 939.82, p < .001$			
M_{c1} : Community interaction	Travel involvement [a]	γ_{11}	$\chi^2(274) = 940.66, p < .001$	$M_{C1} - M_f$:	$\Delta\chi^2 = .84$, df = 1, n.s.	
M_{c2} : Community interaction	Social affiliation	γ_{12}	$\chi^2(274) = 943.29, p < .001$	$M_{C2} - M_f$:	$\Delta\chi^2 = 3.47$, df = 1, n.s.	
M_{c3} : Community interaction	Community benefits	γ_{13}	$\chi^2(274) = 946.00, p < .001$	$M_{C3} - M_f$:	$\Delta\chi^2 = 6.18$, df = 1, $p < .05$	

a: The path was constrained to be equal across the two groups.

Submodel 2

Study introduction

Member participation in online communities is purely a matter of choice (Bagozzi & Dholakia, 2002; Mathwick, 2002). People voluntarily become a member if they view their membership as satisfying for their needs; while they do not participate in a particular online community if they can not recognize the potential value of membership. This means that the success of an online community depends largely on members' volitional motivation to participate in community activities (Ardichivili et al., 2003; Ridings et al., 2002; Wang & Fesenmaier, 2004). Understanding member participation behavior in online communities is thus important to online businesses that seek future business opportunities.

For the last decade, many researchers have focused on member participation behavior in online communities, suggesting that online communities evolve as members progress from being observers to active members (Kozinets, 1999; Langerak et al., 2003, McWilliam, 2000, Walther, 1995). They viewed online communities not only as static entities, but also as social dynamics. Specifically, when members newly join a particular online community, they mostly observe the community activities since they are not familiar with the new online environment (Langerak et al., 2003). Newcomers become active members, however, as they gain online experience in a chosen community. Further, vibrant interactions with other members intensify members' psychological attachment to a particular online community, meaning that members are influenced by their community membership (Kim et al., 2004; Ridings & Gefen, 2004).

However, despite the fact that membership of online communities is very fluid and members show different kinds of online behavior (Hogg, Laing, & Newholm, 2004; Langerak et al., 2003), not all aspects of member participation in the online community have been fully researched by previous studies. Only partial relationships between interaction and identification have been examined, while members' observation behaviors have not been well linked to the interaction-identification relationship.

In this vein, this study empirically explores the member participation behavior in the online travel community. Using the sequential relationship of (observation) → (interaction) → (identification) (Bergami & Bagozzi, 2002; Kozinets, 1999; Wang & Fesenmaier, 2004), this study specifically proposes the effect of member's observation on the member's community identification with a chosen online travel community is fully mediated by the member's interaction activity level

The measurement model

Several criteria were used to evaluate the goodness-of-fit of the overall models, since there is no single statistical test of significance that identifies a correct model given the sample data (Schumacker & Lomax, 1996). Model fit criteria in this study were normed chi-square (χ^2/df), goodness-of-fit index (GFI), root means square error of approximation (RMSEA), comparative fit index (CFI), and Tucker-Lewis index (TLI).

The chi-square (χ^2) is usually recommended as a measure of fit rather than a test statistic in SEM (Jöreskog & Sörbom, 1993), however, because it is sensitive to sample size. Namely, as sample size increases, the χ^2 test are more inclined to reach a significant probability level, whereas as sample size decreases, the χ^2 test has a tendency

to indicate nonsignificant probability level (Schumacker & Lomax, 1996). The normed chi-square (χ^2/df) value is thus provided to assess the overall model fit. The χ^2/df ratio provides two ways to assess inappropriate models: (1) a model that is overidentified; and (2) models that do not fit the observed data and thus need improvement. Carmines and McIver (1981) reported recommended values for the χ^2/df ratio ranging from 1.00 through either 2.0 or 3.0.

Jöreskog and Sörbom (1993) suggested reporting the goodness-of-fit index (GFI) because it dose not depend on sample size and measure how much better the model fits as compared to no model at all (Jöreskog & Sörbom, 1993, p.122). Values greater than .90 are indicative of good fit. Steiger's (1990) RMSEA is presented as a measure of discrepancy per degree of freedom, because it measures lack of fit due to the true difference versus sampling error between the original and reproduced covariance matrix (Okleshen & Grossbart, 1998). Brown and Cudeck (1993) recommended values less than .05 as a close (good) fit and values between .05 and .08 as reasonable errors. TLI (Tucker & Lewis, 1973) and CFI (Bentler & Bonnet, 1980) are also reported, since they are relatively free from the influence of sample size (Schumacker & Lomax, 1996). Values above .90 are taken as a satisfactory model fit.

Table 14

Submodel 2: Descriptive statistics and pairwise correlations

Variable	Mean	SD	α	ρ_C	ρ_V	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Community observation	2.73	1.00	.78	.79	.66	1.00										
(2) Community interaction	3.71	.88	.91	.91	.77	.46[*]	1.00									
(3) Community identification	3.41	.82	.87	.83	.62	.36[*]	.63[*]	1.00								
Individual indicators																
(4) COB1	2.58	1.03				.89	.37	.29	1.00							
(5) COB2	2.88	1.17				.92	.45	.36	.64	1.00						
(6) CIN1	3.75	.94				.40	.92	.54	.35	.37	1.00					
(7) CIN2	3.67	.91				.37	.90	.61	.27	.39	.75	1.00				
(8) CIN3	3.69	1.01				.49	.93	.59	.40	.48	.81	.76	1.00			
(9) CID1	3.30	.89				.33	.56	.86	.26	.34	.47	.54	.55	1.00		
(10) CID2	3.43	.91				.30	.53	.90	.25	.29	.46	.53	.49	.63	1.00	
(11) CID3	3.49	.97				.32	.57	.91	.25	.33	.49	.57	.52	.65	.74	1.00

Note: All correlations are significant at $p < .001$; ρ_C = composite reliability; ρ_v = Variance extracted

An initial principal component factors with eigenvalues of 1.0 or greater were rotated by the varimax analysis to examine the structural validity of the measure. Items with factor loadings less than .50 on a specific factor and cross-loadings greater than .40 on other factors were discarded. One item of identification measure was deleted, because of its cross-loadings of .47 on community interaction scale (i.e., "A strong feeling of camaraderie exists between me and other members."). The remaining 8 items produced three-factor solutions and accounted for 82.1% of the explained variance.

Confirmatory factor analysis (CFA) was subsequently performed to test the adequacy of the measurement model on convergent validity, discriminant validity, and reliability (see Table 14). This model fit well with χ^2/df ratio = 2.01 (χ^2 = 30.13); RMSEA = .053; GFI = .98; TLI = .99; CFI = .99. Convergent validity was supported by all items loading at least .71 on the specified factors, and all loadings being statistically significant ($p < .001$). Discriminant validity was demonstrated by all correlations among three latent variables being significantly less than 1.0 (Bagozzi & Dholakia, 2002; Dillon & Goldstein, 1984) and the shared variance between any two constructs always being less than the average item variance explained by the constructs (Fornell & Larcker, 1981). The correlations among the three constructs ranged from .36 for community observation and community identification to .63 for community interaction and community identification. Results presented in Table 14 showed all constructs shared considerably more variance with their indicators than with other constructs.

The reliability coefficients of three measures were also found to be satisfactory. Cronbach's coefficient alpha ranged from .78 for community observation to .91 for community interaction, which exceeded Nunnally's (1978) .70 threshold for acceptable

reliability. The composite reliability for three constructs surpassed Bagozzi's (1980) recommended minimum level of .70. It ranged from .79 for community observation to .91 for community interaction. The variance-extracted scores exceeded the .50 cutoff recommended by Bagozzi and Yi (1988). It ranged from .62 for community identification to .77 for community interaction. Taken together, these results showed that the measures are internally consistent.

The structural equation model

Structural hypotheses were subsequently tested using structural equation model, since a valid measurement model has been established. The fit for the model shown in Figure 8 was good (χ^2/df ratio = 2.61 (χ^2 = 44.35); RMSEA = .068; GFI = .97; TLI = .98; CFI = .99). As hypothesized, all two path coefficients were significant ($p < .001$) and in the expected positive direction. The model explained 30% of the variance associated with community interaction and 53% of the variance associated with community identification.

Hypotheses testing

In the beginning, to examine whether member's vibrant interaction with others fully mediates the influence of community observation on community identification, partial mediation model which allows direct effect of community observation on community identification was subsequently tested. Because the proposed model was nested within the partial mediation model, a χ^2 difference test was performed to determine whether one of two models (full mediation model vs. partial mediation model)

performs better than the other (Brown et al., 2002). Comparison of the proposed model

(χ^2 = 44.35, df = 17) with partial mediation model (χ^2 = 42.40, df = 16) showed no

substantial improvement in model fit ($\Delta\chi^2$= 1.95, df = 1, n.s.), suggesting that member's

observation affects the member's interaction, which in turn influences the member's

psychological attachment to their online travel community. Moreover, additional

explanatory power was not gained from the additional direct relationship between

community observation and community identification. The squared multiple coefficients

(SMCs) between the proposed model and partial mediation model were exactly the same:

R^2 = .30 for community interaction and R^2 = .53 community identification. Undoubtedly,

the proposed sequential relationship of (community observation) → (community

interaction) → (community identification) (H2-1) was supported by the chi-square

difference test result.

Table 15

Goodness-of-fit indices of proposed (full mediation) and partial mediation model

Path		Proposed model	Partial mediation model
		Standardized estimates (*t*-value)	Standardized estimates (*t*-value)
Community observation → Community interaction	(γ_{11})	.55 (9.17) ***	.54 (9.03) ***
Community interaction → Community identification	(β_{21})	.73 (12.40) ***	.68 (9.99) ***
Community observation → Community identification	(γ_{21})	-	.09 (1.40) n.s.
Goodness-of-fit measures			
χ^2		44.35	42.40
d.f.		17	16
RMSEA		.068	.069
GFI		.97	.97
TLI		.98	.98
CFI		.99	.99
PNFI		.60	.56
R^2			
Community interaction		.30	.30
Community identification		.53	.53

*p < .05; **p < .01; ***p < .001; n.s. = non significant

Member's observation had a significant and positive effect on the member's

interaction (γ_{11} = .55, p < .001), which suggested support for hypothesis 2-2, that as

member's observation increases, his/her level of interaction also increases. In hypothesis

10, member's interaction was also propositioned to have a significant and positive

influence on identification. The results (β_{21} = .73, p < .001) supported hypothesis 2-3.
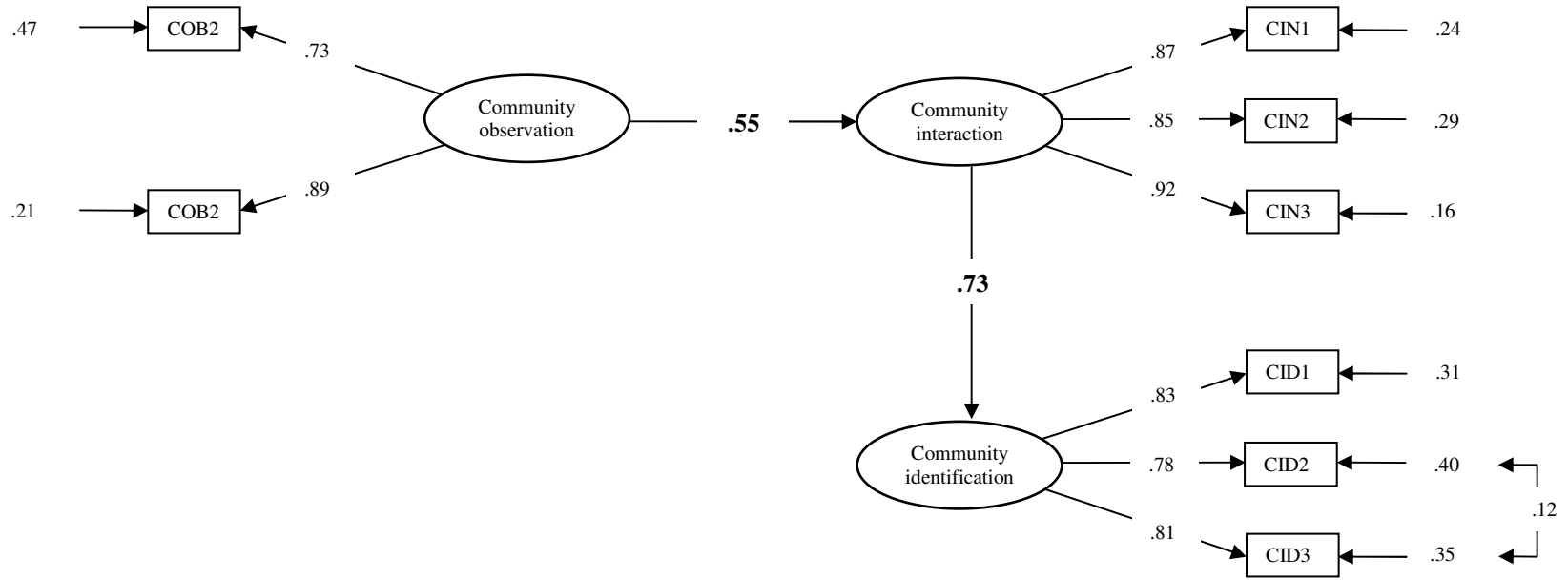
Figure 8

Submodel 2: Standardized structural path coefficients (proposed model)
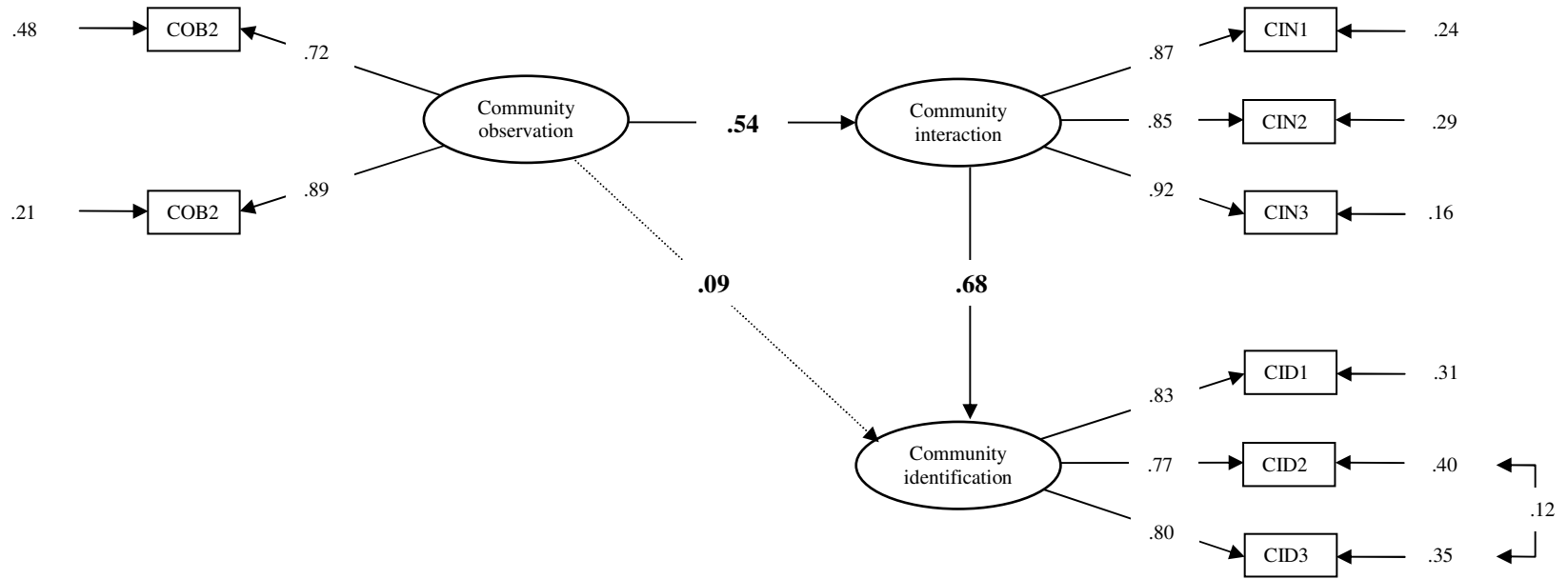
Figure 9

Submodel 2: Standardized structural path coefficients (partial mediation model)

Chi-square difference tests for model comparison

   More detailed chi-square difference test results are presented in this section. To verify a better fit model for the data, a chi-square difference test was performed between the proposed model (full mediation model) and partial mediation model. The proposed (full mediation) model (M_f) posited only sequential relationship of (community observation) $\rightarrow$ (community interaction) $\rightarrow$ (community identification), whilst the partial mediation model (M_p) allowed the one additional path representing the direct relationship between community observation and community identification.

   M_f : The proposed (full mediation) model positing that community observation affects community interaction which in turn influences community identification.

   M_p : The partial mediation model postulating that community observation influences both community interaction and community identification

1. $M_f - M_p$

   a. $\Delta\chi^2 = 44.35 - 42.40 = 1.95$

   b. $\Delta df = 17 - 16 = 1$

   c. $\Delta\chi^2_{(1)\,crit} = 3.84\ (p = .05)$

   d. The chi-square (χ^2) difference was nonsignificant, suggesting that the proposed (full mediation) model provides the better fit for the data. Stated differently, the added path from community observation to community identification does not improve the proposed model fit (A loss of one

degree of freedom was not compensated by the reduction in the value of

the chi-square statistic (Diamantopoulos & Siguaw, 2000).

Submodel 3

Study introduction

The potential business benefits of an online community are very substantial to the travel industry, given that the current trends have demonstrated the importance and implication of online community in the travel market (Kim et al., 2004; Wang & Fesenmaier, 2004). Under this online environment, many travelers have the opportunity to share valuable information or knowledge and to communicate with others who have similar interests in travel. Some travelers may simply share their knowledge or experience, while others tend more to develop strong relationships with like-minded travelers (Wang & Fesenmaier, 2004). In either case, such interaction with other travel members enables travelers to gain an emotional attachment to their community, leading consequently to favorable member voluntary behaviors that benefit the community service provider (Kim et al., 2004).

In managing online travel communities, travel businesses are interested in how members keep strong interests in their online community and how members voluntarily do their acts based on a sense of community values (Bagozzi & Dholakia, 2002; Koh & Kim, 2004), because travel members are more flexible to modify their behaviors in terms of the community value when they are attached to their communities (Bagozzi & Dholakia, 2002; Gruen et al., 2000; Okleshen & Grossbart, 1998).

Yet despite the increasing popularity of the online travel community in recent years, little is known about what voluntary behaviors from members can be expected as a result of members' psychological attachment to their community. A better knowledge of travel members' community activities and their highly beneficial member voluntary

behaviors empowers travel businesses, that want to tap into business potential, to administer more influential online business strategies to the customer.

Besides, current research also suggests that members vary in their contributions to the community according to their interaction frequency levels (Ahuja & Galvin, 2003; Langerak et al., 2003; Okleshen & Grossbart, 1998; Ridings et al., 2002). Specifically, it is suggested that the more interactive members are, the more likely they will become emotionally attached to their community and engender highly beneficial behaviors to community service providers. Based on the problems mentioned above, this study attempts to answer the two unaddressed research questions:

(1) What beneficial member voluntary behaviors occur when members develop a sense of membership to their community? and;

(2) Do members vary in their voluntary behaviors depending on their interaction frequency levels?

Supplementary backgrounds

Community identification

Members' strong identification with a particular online community has long been viewed as a desirable condition for the success of the online community (Bagozzi & Dholakia, 2002; Dutton et al., 1994; Masterson & Stamper, 2003; Okleshen & Grossbart, 1998). Community identification is herein defined as a sense of membership to a particular online travel community. Community identification is a specific form of psychological attachment that can be observed when people are intrinsically motivated by their needs (Dutton et al., 1994; Masterson & Stamper, 2003). Namely, community

members see a particular community as part of themselves when they perceive that their

needs are met through their participation to the community. Such desirable identification

can be formed by a member's voluntary participation and communication with other

members, given that members volitionally participate in the community (Mathwick,

2002). Members develop a sense of membership in the community to the extent that the

online community can meet their various needs and desires (Masterson & Stamper,

2003). Accordingly, to foster members' strong identification effectively, each member's

communications and interactions should be managed within shared values and interests.

Members' sense of identification with the community is also directly linked to a

variety of highly desirable membership behaviors. Once members become attached to

their communities, it is expected that they are more likely to not only have a positive

attitude, but to adjust their behaviors based on their group values (Dutton et al., 1994).

Such strong identification positively affects members' inclination to follow their

community values by accepting other members' opinions or suggestions as references

(Bagozzi & Dholakia, 2002).

Interaction frequency

Interaction frequency refers to the intensity of communication around a shared

interest in travel and tourism. Recent studies have suggested that a member's level of

identification, that occurs when a member participates in the online community, may vary

depending on the member's interaction frequency (Dutton et al., 1994; Langerak et al.,

2003; Okleshen & Grossbart, 1998). They revealed that greater interactions with other

members in the community strengthen members' psychological attachment to a chosen

community. It is generally accepted that as members interact with other members, they are more likely to (1) derive more social value from their participation (Langerak et al., 2003; Wang & Fesenmaier, 2004); (2) perceive the community to be more attractive (Dutton et al., 1994); and (3) evaluate the community service more exactly (Bendapudi & Berry, 1997).

Given that members' identification leads consequently to favorable membership behaviors, it is also suggested that members vary in their contributions to the community according to their interaction frequency levels (Ahuja & Galvin, 2003; Okleshen & Grossbart, 1998; Ridings et al., 2002; Rothaermel & Sugiyama, 2001). They found that not all members show the same level of membership behaviors, even when they develop a sense of belonging to a particular community; suggesting that the greater the level of the member's interaction frequency, the greater the positive relationship between community identification and voluntary membership behaviors.

Measurement model estimation

Following Anderson and Gerbing's (1988) recommendation, the properties (i.e., reliability and validity) of measurement model were assessed before estimating the structural paths to test the hypothesized relationships between the latent variables. Given that the chi-square (χ^2) statistic is sensitive to sample size (Jöreskog & Sörbom, 1993), several indices were also reported as a measure of fit: Jöreskog and Sörbom's (1989) goodness-of-fit index (GFI), Tucker and Lewis' (1973) TLI, Bentler's (1990) comparative fit index (CFI), and Steiger's (1990) root mean square error of

approximation (RMSEA). Nonsignificant χ^2 test results, values greater than .90 for GFI, TLI, and CFI, and value less than .08 for RMSEA are the indicative of good fit.

With χ^2= 275.05 (df = 80, p < .001), GFI = .91, TLI = .94, CFI = .96, RMSEA = .08, measurement model provided a good fit to the data. As Table 16 indicates, all items had a significant loading on their underlying construct with the lowest *t*-value being 11.84 (p < .001), demonstrating adequate convergent validity. To evaluate the discriminant validity, it was examined whether average variance shared between the construct and its indicators exceed the variance shared between the construct and other constructs (Fornell & Lacker, 1981). All constructs were more related with their indicators than with other constructs, establishing discriminant validity (see Table 17). The construct and its indicators were also internally consistent: Cronbach's alphas ranged from .78 for community observation to .87 for community identification and composite reliability estimates ranged from .80 for community observation to .88 for community identification and behavioral changes. The more conservative variance extracted for each scales also provided further support for the measurement scales' soundness (Prichard, Havitz, & Howard, 1999).

Table 16

Submodel 3: Measurement parameter estimates

Construct and indicator	Standardized loading (*t*-value)	Item reliability	Item-to-total correlation
Community observation			
I often observe the community discussion without adding my comments.	.70 (11.84)	.49	.64
I often watch the whole community activities without participating.	.92 (14.66)	.85	.64
Community identification			
I feel strong ties to other members.	.77 (16.52)	.60	.69
I find it easy to form a bond with other members.	.82 (18.11)	.67	.76
I feel a sense of community with other members.	.88 (20.11)	.77	.80
A strong feeling of camaraderie exists between me and other members.	.74 (15.48)	.54	.66
Knowledge sharing			
I often provide useful information/knowledge for my travel community members.	.76 (15.71)	.58	.69
I eagerly reply to postings by the help-seeker of my travel community.	.84 (17.98)	.71	.72
In general, I share my knowledge with other travel community members.	.77 (16.01)	.60	.68
Community promotion			
I would like to recommend my travel community to others.	.80 (16.68)	.64	.69
I would like to introduce my travel community to others.	.85 (18.08)	.72	.74
I will continuously talk to others about benefits of my travel community.	.73 (14.88)	.54	.65
Behavioral changes			
The way I search for information about travel products/services has changed as a result of my being in the travel community group.[a]	-	-	-
My travel community has influenced my behavior in some ways, such as what things I buy.	.76 (16.11)	.58	.71
Where I buy travel products and services has changed as a result of my being in the online travel community.	.92 (20.85)	.84	.82
The online travel community has influenced how I go about buying things.	.84 (18.44)	.71	.74

Note 1: N = 352; All *t*-values are significant at *p* < .001.

a: This item was deleted after Cronbach's reliability test

Table 17

Sbumodel 3: Descriptive statistics and correlation estimates

Variable	Mean	SD	(1)	(2)	(3)	(4)	(5)	Composite reliability	Average variance extracted
(1) Community observation	2.73	1.00	**.78**					.80	.67
(2) Community identification	3.41	.82	.36**	**.87**				.88	.65
(3) Knowledge sharing	3.80	.73	.38**	.47**	**.84**			.84	.63
(4) Community promotion	4.00	.74	.20*	.46**	.40**	**.83**		.84	.63
(5) Behavioral changes	3.14	.94	−.11	.14*	.00	.13*	**.86**	.88	.71

Note 1: N = 352; Coefficient alphas are reported in the diagonal.
$^*p < .05$; $^{**}p < .01$

Structural model estimation

Because the measurement model revealed a reasonable representation of the data, the structural paths were estimated to test the hypothesized relationships between constructs (Anderson & Gerbing, 1988). As shown in Table 18, the structural model fit the data well, with $\chi^2 = 290.87$ (df = 83, $p < .001$), GFI = .91, TLI = .94, CFI = .95, RMSEA = .08. With the exception of community identification and behavioral changes link, all paths had a significant structural path coefficient ($p < .001$).

Results showed that the effect of member's community observation on community identification was positive and significant ($\gamma_{11} = .41$, $t = 5.93$), which suggested support for H3-1. Community identification had also a positive effect on both knowledge sharing ($\beta_{21} = .68$, $t = 9.02$) and community promotion ($\beta_{31} = .65$, $t = 8.98$), supporting H3-2 and H3-3, respectively. Contrary to expectation, however, community identification was not found to be significantly related to member's behavioral changes ($\beta_{41} = .07$, $t = 1.17$). Thus, H3-4 was not supported.

Table 18

Submodel 3: Structural path estimates and goodness-of-fit indices

Hypotheses	Paths		Estimates	t-value
H3-1	Community observation $\rightarrow$ Community identification	γ_{11}	.41	5.93***
H3-2	Community identification $\rightarrow$ Knowledge sharing	β_{21}	.68	9.02***
H3-3	Community identification $\rightarrow$ Community promotion	β_{31}	.65	8.98***
H3-4	Community identification $\rightarrow$ Behavioral changes	β_{41}	.07	1.17[n.s.]

Model fit indices

$\chi^2 = 290.87$ (df = 83, $p < .001$)
GFI = .91
TLI = .94
CFI = .95
RMSEA = .08

** $p < .01$; *** $p < .001$; n.s. = non significant

Subgroup analysis

Given the fact that member's frequent interactions with others intensify his/her sense of belonging to the online community and engender highly beneficial behaviors to community service providers (Gruen et al., 2000; McWilliam, 2000), this study proposed that the magnitudes of the hypothesized relationships might differ by member's interaction frequency. To better understand the potential differences between high interactive members and low interactive members, the sample was split at the mean of member's interaction hour. A chi-square difference test was then performed between a model where parameters are free and a model where hypothesized parameters are constrained to be equal sequentially. Potential differences in the slope estimates exist if the change in the χ^2 value is significant (Simonin, 1999).

Overall, there were substantial differences between high interactive group and low interactive group. The relative magnitudes of hypothesized relationships were stronger when interaction frequency is high than when interaction frequency is low. For community observation and community identification path, the freed model yielded a $\chi^2 = 807.19$ (df = 182, $p < .001$), the constrained model yielded a $\chi^2 = 811.44$ (df = 183, $p < .001$), and the difference between the two models was significant ($\Delta\chi^2 = 4.25$, df = 1, $p < .05$), which provides support for H3-5. High interactive members ($\gamma_{11} = .56$, $t = 5.33$) showed a stronger positive relationship between community observation and community identification than did low interactive members ($\gamma_{11} = .32$, $t = 3.84$).

There was significant difference in the influence of community identification and knowledge sharing across groups ($\Delta\chi^2 = 12.70$, $p < .001$), providing support for H3-6. The effect of community identification on knowledge sharing was greater in the high

interactive group ($\beta_{21} = .82$, $t = 12.41$) than in the low group ($\beta_{21} = .47$, $t = 5.50$).

Community identification also had significant higher effect on community promotion

($\Delta\chi^2 = 21.34$, df = 1, $p < .001$) for high interactive members ($\beta_{31} = .85$, $t = 12.81$) than for

low interactive members ($\beta_{31} = .40$, $t = 4.99$), thus support is provided for H3-7. Further

analysis through chi-square difference test revealed that the influence of community

identification on behavioral changes ($\Delta\chi^2 = 9.37$, df = 1, $p < .01$) was stronger among

high interactive members ($\beta_{41} = .37$, $t = 4.92$) than among low interactive members ($\beta_{41} =$

$.01$, $t = .17$). Thus, H3-8 was also supported. Community identification affected

behavioral changes in high interactive group, but did not so in low interactive group.

Table 19

Submodel 3: Structural parameter estimates for two group comparison on interaction

frequency

Parameter				High interaction (n = 165)		Low interaction (n = 187)	
				Estimate	t-value	Estimate	t-value
Observation frequency	$\rightarrow$	Community identification	γ_{11}	.56	5.33***	.32	3.84***
Community identification	$\rightarrow$	Knowledge sharing	β_{21}	.82	12.41***	.47	5.50***
Community identification	$\rightarrow$	Community promotion	β_{31}	.85	12.81***	.40	4.99***
Community identification	$\rightarrow$	Behavioral changes	β_{41}	.37	4.92***	.01	.17[n.s.]

** $p < .01$; *** $p < .001$; n.s. = non significant
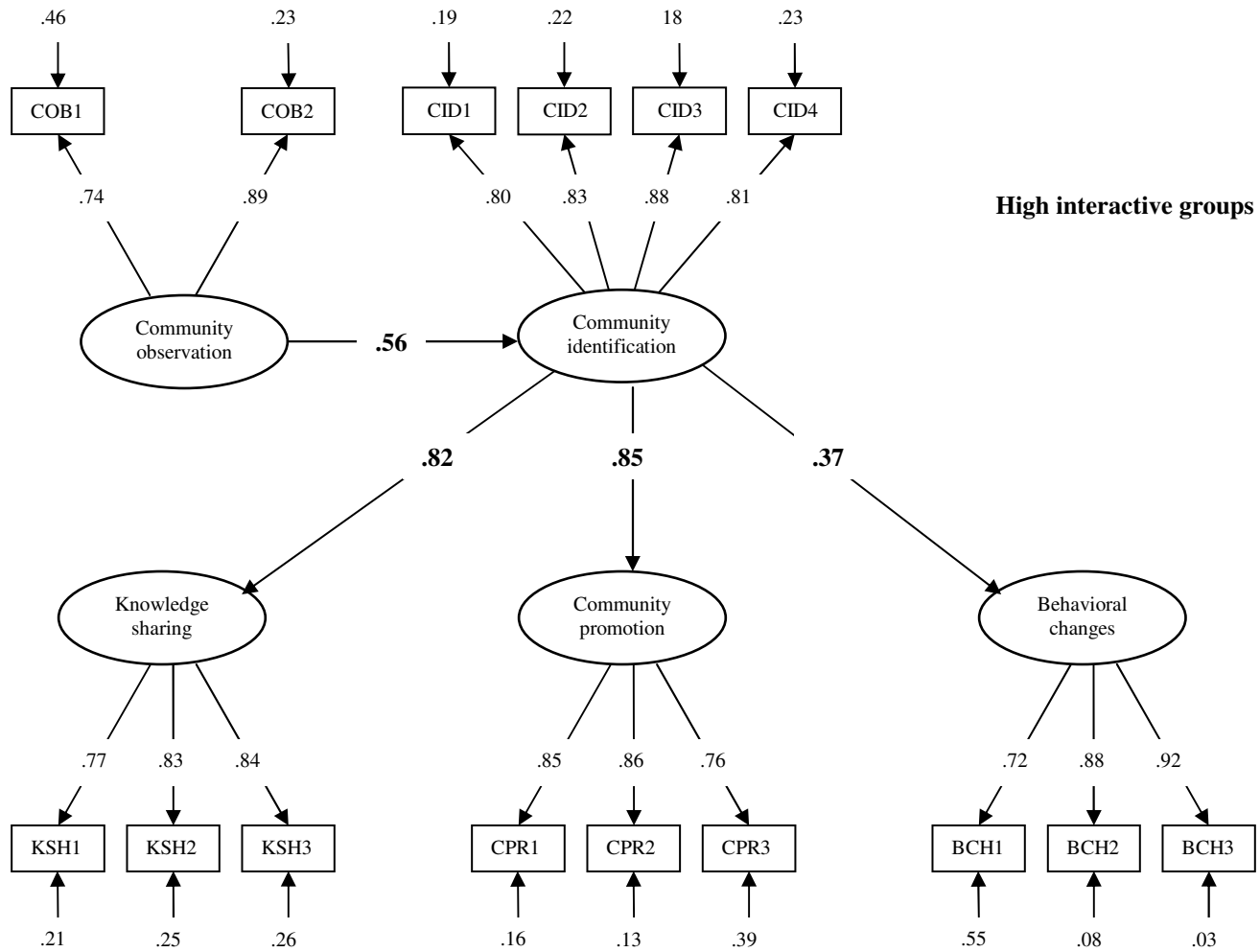
Figure 10

Submodel 3: Standardized parameter coefficients for high interactive group
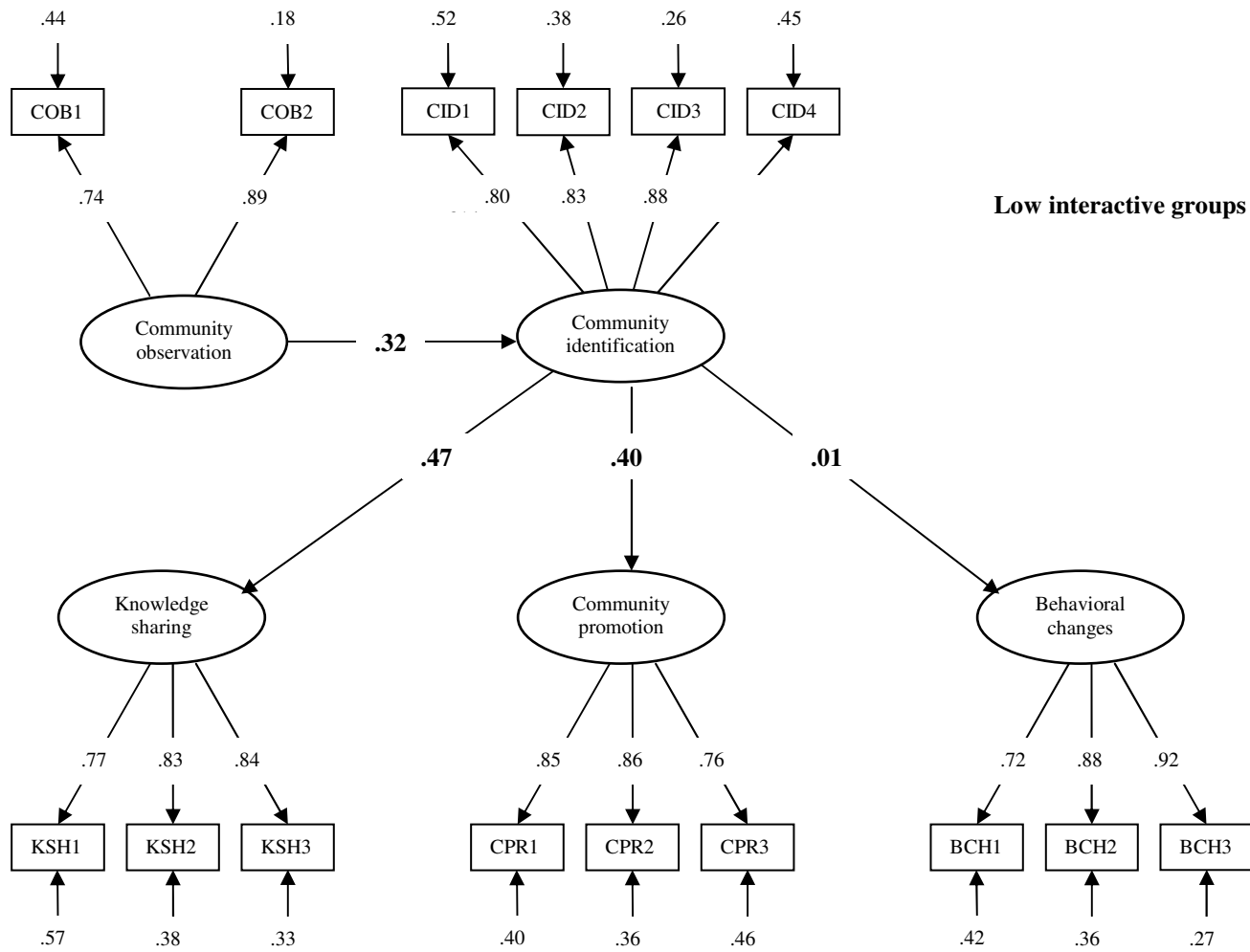
Figure 11

Submodel 3: Standardized parameter coefficients for low interactive group

A series of chi-square difference tests

A series of chi-square difference tests was performed to examine whether there are any significant differences in hypothesized structural parameters across the low and high interactive groups. The free model (M_f) in which all structural paths were allowed to vary across the low and high interactive groups was subsequently compared with four constrained models ($M_{c1} - M_{c4}$) in which only one hypothesized structural path were set to be equal across the two groups.

M_f : All structural paths were allowed to be estimated freely across the two
   groups.

M_c : The following paths were constrained to be equal across the two groups.

- M_{c1} : The path from community observation to community identification
   set to be equal across the two groups.

- M_{c2} : The path from community identification to knowledge sharing set to
   be equal across the two groups.

- M_{c3} : The path from community identification to community promotion
   set to be equal across the two groups.

- M_{c4} : The path from community identification to behavioral changes
   set to be equal across the two groups.

1. $M_{c1} - M_f$

    a. $\Delta\chi^2 = 811.44 - 807.19 = 4.25$

    b. $\Delta df = 183 - 182 = 1$

    c. $\Delta\chi^2_{(1) \text{ crit}} = 3.84 \ (p = .05)$

d. The resulting difference in chi-square (χ^2) is significant, indicating that the effect of community observation on community identification differs across the two groups.

e. The model with unequal slope (M_f) gives $\beta_{High} = .56$ ($t = 5.33$) and $\beta_{Low} = .32$ ($t = 3.84$).

2. $M_{c2} - M_f$

   a. $\Delta\chi^2 = 819.89 - 807.19 = 12.70$

   b. $\Delta df = 183 - 182 = 1$

   c. $\Delta\chi^2_{(1)\,crit} = 10.83$ ($p = .001$)

   d. The resulting difference in chi-square (χ^2) is significant, thereby implying that the effect of community identification on knowledge sharing varies across the two groups.

   e. The model with unequal slope (M_f) gives $\beta_{High} = .82$ ($t = 12.41$) and $\beta_{Low} = .47$ ($t = 5.50$).

3. $M_{c3} - M_f$

   a. $\Delta\chi^2 = 828.53 - 807.19 = 21.34$

   b. $\Delta df = 183 - 182 = 1$

   c. $\Delta\chi^2_{(1)\,crit} = 10.83$ ($p = .001$)

   d. The resulting difference in chi-square (χ^2) is significant, suggesting that the effect of community identification on community promotion differs across the two groups.

   e. The model with unequal slope (M_f) gives $\beta_{High} = .85$ ($t = 12.81$) and $\beta_{Low} = .40$ ($t = 4.99$).

4. $M_{c4} - M_f$

    a. $\Delta\chi^2 = 816.56 - 807.19 = 9.37$

    b. $\Delta df = 183 - 182 = 1$

    c. $\Delta\chi^2_{(1)\ crit} = 6.64\ (p = .01)$

    d. The resulting difference in chi-square (χ^2) is significant, suggesting that the effect of community identification on behavioral changes is not equal across the two groups.

    e. The model with unequal slope (M_f) gives $\beta_{High} = .37\ (t = 4.92)$ and $\beta_{Low} = .01\ (t = .17)$.

Table 20

Submodel 3: Results of a series of chi-square difference tests

Model					**Chi-square statistic**	**Test of equal path**	
M_f:	Free model				$\chi^2 = 807.19$, df = 182, $p < .001$		
M_{c1}:	Community observation	$\rightarrow$	Community identification [a]	γ_{11}	$\chi^2 = 811.44$, df = 183, $p < .001$	$M_{C1} - M_f$:	$\Delta\chi^2 = 4.25$, df = 1, $p < .05$
M_{c2}:	Community identification	$\rightarrow$	Knowledge sharing	β_{21}	$\chi^2 = 819.89$, df = 183, $p < .001$	$M_{C2} - M_f$:	$\Delta\chi^2 = 12.70$, df = 1, $p < .001$
M_{c3}:	Community identification	$\rightarrow$	Community promotion	β_{31}	$\chi^2 = 828.53$, df = 183, $p < .001$	$M_{C3} - M_f$:	$\Delta\chi^2 = 21.34$, df = 1, $p < .001$
M_{c4}:	Community identification	$\rightarrow$	Behavioral changes	β_{41}	$\chi^2 = 816.56$, df = 183, $p < .001$	$M_{C4} - M_f$:	$\Delta\chi^2 = 9.37$, df = 1, $p < .01$

a: The path was constrained to be equal across the two groups.

CHAPTER V

DISCUSSION AND CONCLUSIONS

Submodel 1

Determinants of member interactions

As proposed, travel involvement, social affiliation, and community benefits were all revealed as important factors that drive people into online communities. The results suggest that the more people perceive travel and tourism as relevant and important based on their inherent needs, values, and interests, they become increasingly interested in communicating with like-minded people by sharing their information or experiences. This finding reinforces the notion that highly involved people pay more attention to searching for information and show a greater level of product knowledge by understanding the strengths and weaknesses of different alternatives (Broderick & Mueller, 1999; Miquel et al., 2002). Online marketers should thus identify highly involved people in travel and encourage them to participate in their online community by determining the types of benefits the community member will obtain (Holland & Baker, 2001). Sufficient depth and breadth should be assured by providing relevant and valuable information to travel members. Ongoing communications among members should be guided by the community's shared values and interests.

In line with previous studies (Bove & Johnson, 2000; Mathwick, 2002; Ridings & Gefen, 2004), this finding shows that highly sociable people are more likely to join online

travel communities for developing interpersonal relationships. In other words, highly

sociable people are more eager to participate in online travel communities since they

view such interactive environments as an ideal place to exchange opinions and request

advice about problems (Ridings & Gefen, 2004). Additionally, given that people's social

affiliation is an innate personality trait that is not easily changed and tends to persist

throughout life (Odekerken-Schröder et al., 2003), a specific marketing strategy

containing a list of specific actions should be implemented for gaining access to potential

members. For example, online marketers could support several types of social groups

focusing on very specific topics related to travel and tourism since people who join group

activities tend to be highly affiliated people. Such groups are formed in many different

ways and for many purposes such as leisure activities, hobbies, professional knowledge,

or products/brands (Porter, 2004). In so doing, online marketers would understand the

basic needs of highly sociable people and consequently reach potential travel members.

The result also showed that members' interaction activities are driven by the

perceived value that they place on online travel communities. Stated differently, as

people view the service provided by the online community as valuable and reliable, they

are more willing to join the online travel communities (Okleshen & Grossbart, 1998).

Because members enjoy several benefits from their participation in online communities,

the specific benefits participants will obtain from their participation in online

communities should first be fully addressed. In general, being a member gives

participants the opportunity to share information or knowledge and to communicate with

like-minded people (Bagozzi & Dholakia, 2002; Ridings & Gefen, 2004; Wang &

Fesenmaier, 2004). Accordingly, relevant and valuable information should be delivered

and easily accessed by all members in order to satisfy the members' needs for information sharing. Participants may find it difficult to search for information which may be attributed to insufficient depth and breadth of information being provided by the online travel community. If participants encounter difficulties in the search stage, they are not willing to interact with like-minded people by sharing their own information or experiences. To ensure the quality of information, online community managers should take an active role as experts in the online community by leading ongoing discussions among members. Members' social interactions could then be encouraged by providing similar aspects of the relational interactions that are traditionally found in offline travel communities (Carpenter, 1998; Kozinets, 1999). For example, online communities should allow members to identify other members by accessing to their profiles and to determine who responded to their posts or who accessed their shared information or experiences.

This study proposed that members' sense of identification with a particular online community is fostered by their strong interactions around a shared interest in travel and tourism. Consistent with the expectation, the findings indicate that members' frequent interactions with other members intensify their psychological attachment to a chosen online travel community. This means that if members' feelings of affiliation and belonging are based on shared value and interests, members are more apt to develop a sense of membership in the online community, though they meet in cyber space (Bagozzi & Dholakia, 2002; Okleshen & Grossbart, 1998; Ridings et al., 2002).

Interestingly, the results show that the relationship between community benefits and community interaction varies depending on a member's observation frequency level.

The greater member's observation frequency, the greater is the inclination that the member is more motivated by the specific benefits from their participation in the online community. Otherwise stated, members' strong interactions are more driven by the perceived value that they place on online communities when they fully observe the community activities without interactions. This finding underlines the importance of member's observation frequency level for making online communities more interactive social dynamics (Burnett, 2000; Rothaermel & Sugiyama, 2001). Accordingly, by addressing the specific benefits from being a member, online marketers invoke potential members' interest in the community interaction. Potential members should be allowed to observe the important aspects of community activities without signing up for membership (Ridings & Gefen, 2004). Their interactions could be assured with "free trial membership." They would consider their membership as satisfying their specific needs, since they can more thoroughly evaluate the service provided by the online travel community. Consequently, they would be active members who contribute strongly to the community interactions.

Summary of submodel 1

The primary goal of submodel 1 was to (1) identify significant factors influencing online community members to interact with other members in the online community; and (2) examine whether the effects of such antecedents (i.e., travel involvement, social affiliation, and community benefits) on member's interaction activities varies according to the degree of the member's observation frequency. Results showed that (1) three proposed antecedents of member participation were all found to be significant factors that drive people into online community activities; (2) member's frequent interactions with other members strengthen his/her sense of belonging to a particular online travel community; and (3) the relationship between community benefits and community interaction differs with respect to a member's level of observation frequency.

Submodel 2

Member participation

People voluntarily join online travel communities when they perceive community services as being consistent with the benefits they seek (Wang & Fesenmaier, 2004). By participating in a particular online travel community as a member, people have the opportunity to share valuable information and to forge closer relationships with other members who have similar interests in travel (Hagel, 1999; Kim et al., 2004). However, even when people realize benefits from their participation, they tend to show different online community behaviors (Langerak et al., 2003). This is because members progress from being observers to highly identified members. Their main focus shifts from information gathering to social relationship building (Kozinets, 1999).

Given the fact that members progress through the process, this study examined all aspects of member participation behaviors in online travel communities. Following some previous studies (Ridings & Gefen, 2004; Thorbjørnsen et al., 2002), member observation was viewed as a possible part of participation behaviors. The sequential relationship of community observation to community interaction to community identification was proposed and examined in this study.

Overall, results of this study showed that proposed relationships were all supported, indicating that member participation behavior is multi-level activity which occurs sequentially. Member's observation affected the member's interaction level, which in turn influenced the member's identification level. The mediating role of member's interaction level between community observation and community identification further supported the proposed sequential relationship. These findings first

accentuate the importance of viewing member's observation activity as an acceptable condition of member participation behavior. To evaluate the online community service more exactly, new travel members tend to mostly observe the community activities without interacting with other members (Ahuja & Galvin, 2003; Sproull & Faraj, 1997). One possible way to increase member's observation behavior is to make experienced travel members' resources easily accessible and to feature the specific benefits from their active interactions (Holland & Baker, 2001). Such efforts change new travel member's uncertain observation activities into factual interaction behaviors. In addition, new travel members should not be rushed into active communications too early before adjusting their thoughts and behaviors to the new environment (Takahashi et al., 2003). For new travel members, it is very important to capture their interest in order to keep them engaged in the online travel community (Takahashi et al., 2003).

Once they view the service of the online travel community as fulfilling their specific needs through observation, however, travel members are more likely to engage in ongoing communication with other members (Burnett, 2000; Langerak et al., 2003). Ultimately, such increased interaction with other members enables travel members to develop an emotional attachment to their online travel community (Bergami & Bagozzi, 2000; Bhattacharya et al., 1995; Koh & Kim, 2004). In this stage, ongoing communications should be based on shared value and interests of the members. To do this, the flow of social interaction based on member-generated content should be properly managed by community providers to ensure control of the communication without being overbearing and disruptive to the sense of community among the members (Carpenter, 1998; Rothaermel & Sugiyama, 2001). In addition, travel members should be able to (1)

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receive feedback related to their contributions to ongoing communications (Balasubramanian & Mahajan, 2001); (2) check who responded to each posting; and (3) access detailed member profiles (Ridings & Gefen, 2004).

The final step of member participation in online travel communities is a sense of identification. Frequent interaction with other members allows travel members to fortify their sense of identification with a chosen online travel community. Put another way, travel members develop powerful "virtual identities" through their active interactions around their interest in travel (Preece et al., 2003; Romm et al., 1997). Such strong identification is crucial to the success of the online travel community in that, by fostering member's sense of membership, influencing members' decision-making process is the ultimate goal of managing or supporting online travel communities. In fact, travel members are more prone to modify their thoughts and behaviors in terms of the community value when they identify themselves as members (Bagozzi & Dholakia, 2002; Kim et al., 2004; Okleshen & Grossbart, 1998). There is high likelihood that travel members with strong identification are more willing to engage in travel-related transactions within their online travel communities, by evaluating travel information based on shared opinions or suggestions.

As a result, travel businesses managing or supporting online travel communities could implement more detailed business strategies by understanding the sequential structure of member participation behavior. Travel businesses seeking to develop a competitive advantage would benefit by recognizing highly beneficial member behaviors related to the member's strong identification with the online travel community.

Summary of submodel 2

Given that membership progresses over time, the sequential relationship of (community observation) → (community interaction) → (community identification) was first explored in submodel 2. It is further examined whether the effect of member's community observation on the member's community identification with a particular online travel community is fully mediated by the member's interaction activity level. Results confirmed that (1) member's observation affects the member's interaction level, which in turn influences the member's sense of identification level; and (2) member's interaction level facilitates (mediates) the relationship between observation activities and community identification.

Submodel 3

Member voluntary behaviors

This study proposed that members' active observations with other members strengthen their sense of belonging to the online travel community, resulting in favorable member voluntary behaviors such as knowledge sharing, community promotion, and behavioral changes. A deeper understanding of travel members' community activities and desirable member behaviors allows travel businesses that seek to achieve the potential business benefits to manage online communities more effectively. Given that desirable member behaviors may differ depending on members' interaction frequency levels (Ahuja & Galvin, 2003; Langerak et al., 2003; Okleshen & Grossbart, 1998), the potential differences between high and low interactive members were also examined.

Consistent with the existing literature (Ridings & Gefen, 2004; Takahashi et al., 2003; Thorbjørnsen et al., 2002), results of this study confirmed that member's observation frequency level has a positive effect on his/her identification. This means that potential sense of identification can also be nurtured through member's frequent observation activities. The propensity to behave in terms of their shared values and interests would increase with members' increased level of observation activities. In other words, more active observers are more likely to be affected by their community's shared values and interests by developing confidence in obtained information (Sproull & Faraj, 1997; Thorbjørnsen et al., 2002), though they do not contribute frequently to ongoing conversations (Ridings & Gefen, 2004; Takahashi et al., 2003). Marketers should thus provide various community features so that members can derive a full range of community values from their participation. Active observers should be able to

experience the important aspects of services provided by the online travel community without having to sign up for membership (Ridings & Gefen, 2004). Undoubtedly, online travel members would have an increased desire to interact with other members, leading to an increased sense of identification with the online travel community when they perceive community services as being consistent with the benefits they seek (Wang & Fesenmaier, 2004).

The findings of this study showed that travel member's identification has a positive effect on his/her knowledge sharing activities. This means that such desirable membership behaviors as knowledge sharing and community promotion can be anticipated from online travel members who have a strong sense of identification with the online travel community. Given that the online travel community's content is mostly generated by its members (Langerak et al., 2003; Ridings & Gefen, 2004), active knowledge sharing behaviors guarantee the prosperity of the online travel community. Travel businesses can benefit from their ability to accurately grasp travel customers' needs and the current trends of travel by monitoring member-generated information and knowledge. Advanced searching capabilities should be provided to ensure that each travel member's shared knowledge is easily accessible to all other members (Balasubramanian & Mahajan, 2001). By using the advanced search function, travel members can narrow down their search and more easily locate their specific interest in travel.

Results also showed that promotion through positive word-of-mouth can be visualized as members become emotionally attached to their online community. This implies that the online travel community members play an important role as a reference

source when they become a psychologically attached to their online travel communities (Bagozzi & Dholakia, 2002, Dutton et al., 1994). In other words, as online travel community members identify more strongly with a particular community, they are more inclined to spread favorable information about the online community. These promotion activities are extremely critical to the success of online travel communities, since most travel customers consider personal recommendations above all other information sources when they engage in specific purchasing behavior (Bendapudi & Berry, 1997; Fodness & Murray, 1997; Holland & Baker, 2001). Recognition and rewards for such beneficial promotion activities should thus be utilized as a catalyst for more voluntary membership behaviors. The primary reward should be extensive public recognition, since travel members tend to be more satisfied when they perceive that their contributions to a particular online travel community are welcomed and approved by other members (Balasubramanian & Mahajan, 2001; Gruen et al., 2000; Wang & Fesenmaier, 2004). Cash back rewards can additionally be administered as a supportive tool for improving promotion activities.

Contrary to expectation, member's sense of identification was not found to be significantly related to intended behavioral changes. This result is different from those of some previous studies (Gruen et al., 2000; Kim et al., 2004, Okleshen & Grossbart, 1998), who suggested that strong community identification enables travel members to accept the community values and adjust their behaviors. The current finding is somewhat disappointing in that travel marketers ultimately seek more business benefits from managing or sponsoring online travel communities (Hagel, 1999; Ridings & Gefen, 2004). One potential explanation is that travel members primarily view their community

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not as a commercial dynamic, but as an informational and social universe (Balasubramanian & Mahajan, 2001; Glogoff, 2001). Otherwise stated, rather than seeking monetary benefits directly from a particular online travel community, travel members intend to gain future economic benefits indirectly from their informational and social interactions. By utilizing the accumulated information and knowledge, travel members can choose the best travel values when they arrange travel plans.

This is partly because online travel communities do not effectively incorporate economic activities into informational and social interactions (Balasubramanian & Mahajan, 2001; Koh & Kim, 2004; Mills & Moshavi, 1999). Thus, by properly embedding transaction capability into the community's informational and social interactions (Balasubramanian & Mahajan, 2001), travel marketers would ultimately enable travel members to make their travel choices within the community.

An important finding was that the magnitude of the proposed relationship varies depending on member's interaction frequency level. There were significant differences between high- and low-frequency interactive members with respect to voluntary membership behaviors such as knowledge sharing, community promotion, and behavioral changes. The effects of community identification on membership behaviors were stronger among more interactive members than among less interactive members. This indicates that high interactive members are more likely to share their expertise or experiences with other members (Ahuja & Galvin, 2003; Wang & Fesenmaier, 2004); and promote the online travel community to others (Gruen et al., 2000), when they develop a sense of belonging to the online travel community. Results also showed that increased interactions strengthen the lesser effect of community identification on

behavioral changes. Highly interactive travel members engage in e-based transactions when they see themselves as members, while less interactive members do not show the same meaningful behavioral changes as a result of a sense of belonging to the online travel community (Kim et al., 2004; Okleshen & Grossbart, 1988). This implies that behavioral changes in member's transaction activities can be directed by fostering a member's positive interactions when they have a sense of identification with a particular online travel community.

Consequently, these findings stress the importance of supporting travel member's frequent interactions with others as a substantive component of the success of an online travel community (Langerak et al., 2003; Okleshen & Grossbart, 1998; Ridings et al., 2002; Wang & Fesenmaier, 2004). To encourage members to become more interactive, travel marketers should provide suggestions and tips to assist members in navigating the online travel community (Langerak et al., 2003). Each travel member's communication and interactions should be performed within shared values and interests in order to increase interaction. By maintaining members shared values and interests, online travel communities allow travel members to keep their personal perspectives (Suler, 1998). Additional methods to increase member interaction include the establishment of a variety of forums within the community. This can be done by providing formal discussions featuring travel experts and informal member chat rooms (Ridings & Gefen, 2004; Suler, 1998).

These specific marketing schemes enable travel members to communicate and interact more directly around their interest in travel. Such increased interactions with other travel members strengthen the likelihood that travel members will show highly

beneficial membership behaviors such as knowledge sharing, community promotion, and

behavioral changes as a result of stronger identification with travel community.

Summary of submodel 3

The purpose of submodel 3 was to (1) reveal highly desirable member voluntary behaviors that occur when members develop a sense of belonging to their community; and (2) investigate whether the effect of a member's identification on his/her voluntary behaviors varies depending on the member's interaction levels with other members. Results showed that (1) even active observers can develop a sense of membership by viewing themselves as member, though they do not contribute frequently to ongoing communications; and (2) member voluntary behaviors such as knowledge sharing, community promotion, and behavioral changes based on the community values can be expected when online travel members have a strong sense of membership with a given online travel community.

Limitations and future research

        There were some study limitations that should be acknowledged. The first limitation to the study includes the use of a convenience sample of respondents who decided that they would like to participate in the survey (Kim et al., 2004; Koh & Kim, 2004; Langerak et al., 2003; Okleshen & Grossbart, 1998). Even though the demographics of the sample were fairly close to the known population of online community members, the respondents may have different attitudinal and behavioral patterns. This means that self-selection could result in a non-representative sampling bias. As such, the robustness of the findings should be further examined on a larger random sample of online community members across a wide range of online communities.

        Given that membership progresses over time (Kozinets, 1999; Langerak et al., 2003, McWilliam, 2000, Walther, 1995), another study limitation may arise in the design of the study as a cross-sectional one in which data was collected from a targeted sample at only one point in time to answer research questions of interest. Longitudinal designs in the future may provide additional insight into member participation and interaction activities of online travel communities, because such member activities are multi-level behavioral modes which occur sequentially. The findings of this study could thus be understood as preliminary evidence in a specific phase of the changing membership paradigm.

        A further study limitation might be that member participation and interaction behaviors were not explored in a variety of types of online communities (Ridings & Gefen, 2004). Member participation and interaction can differ with respect to different

types of online community. Future research that examines how such voluntary member behaviors vary depending on different types of online communities would provide more meaningful insight to the findings of this study. Moreover, potential differences between member-initiated communities and commercially-oriented communities could also be addressed in the future research (Porter, 2004). Especially, the effect of community identification on behavioral changes could be refined to more specific relationships in the profit online community model pursuing economic value.

A final limitation of the study relates to the use of a self-report measure of member participation and behavioral outcomes such as knowledge sharing, community promotion, and behavioral changes (Bettencourt, 1997; Langerak et al., 2003; Sujan, Weitz, & Kumar, 1994). Self-evaluations may have inflated some parts of the hypothesized relationships. To reduce this potential bias, actual behavioral data on member participation and behavioral outcomes should be utilized for future research.

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APPENDIXES

APPENDIX A

SUBMODEL 1: CONSTRUCT RELIABILITY AND VARIANCE EXTRACTED
ESTIMATES

Reliability

Construct reliability $(\rho_c) = (\sum \lambda)^2 \big/ [(\sum \lambda)^2 + \sum(\theta)]$

Where λ = indicator loadings
θ = indicator error variances (i.e., variances of the δ's or ε's)

$$\text{Travel involvement} = \frac{(.74 + .92 + .89 + .81)^2}{(.74 + .92 + .89 + .81)^2 + (.45 + .15 + .21 + .34)} = .936$$

$$\text{Social affiliation} = \frac{(.74 + .77 + .77 + .68)^2}{(.74 + .77 + .77 + .67)^2 + (.46 + .40 + .40 + .55 + .26)} = .808$$

$$\text{Community benefits} = \frac{(.82 + .86 + .74)^2}{(.82 + .86 + .74)^2 + (.33 + .27 + .45)} = .848$$

$$\text{Community interaction} = \frac{(.83 + .87 + .86)^2}{(.83 + .87 + .86)^2 + (.31 + .24 + .25 + .09)} = .880$$

$$\text{Community identification} = \frac{(.79 + .77 + .83 + .76)^2}{(.79 + .77 + .83 + .76)^2 + (.38 + .40 + .10 + .31 + .41)} = .861$$

Variance extracted

Variance extracted $(\rho_v) = (\sum \lambda^2) \big/ [(\sum \lambda^2) + \sum(\theta)]$

Where λ = indicator loadings
θ = indicator error variances (i.e., variances of the δ's or ε's)

$$\text{Travel involvement} = \frac{(.74)^2 + (.92)^2 + (.89)^2 + (.81)^2}{(.74)^2 + (.92)^2 + (.89)^2 + (.81)^2 + (.45 + .15 + .21 + .34)} = .712$$

$$\text{Social affiliation} = \frac{(.74)^2 + (.77)^2 + (.77)^2 + (.68)^2}{(.74)^2 + (.77)^2 + (.77)^2 + (.67)^2 + (.46 + .40 + .40 + .55 + .26)} = .513$$

$$\text{Community benefits} = \frac{(.82)^2 + (.86)^2 + (.74)^2}{(.82)^2 + (.86)^2 + (.74)^2 + (.33 + .27 + .45)} = .651$$

$$\text{Community interaction} = \frac{(.83)^2 + (.87)^2 + (.86)^2}{(.83)^2 + (.87)^2 + (.86)^2 + (.31 + .24 + .25 + .09)} = .711$$

$$\text{Community identification} = \frac{(.79)^2 + (.77)^2 + (.83)^2 + (.76)^2}{(.79)^2 + (.77)^2 + (.83)^2 + (.76)^2 + (.38 + .40 + .10 + .31 + .41)} = .608$$

APPENDIX B

SUBMODEL 2: CONSTRUCT RELIABILITY AND VARIANCE EXTRACTED
ESTIMATES

Reliability

Construct reliability $(\rho_c) = (\sum \lambda)^2 / [(\sum \lambda)^2 + \sum (\theta)]$

Where $\quad \lambda$ = indicator loadings
$\quad\quad\quad\ \theta$ = indicator error variances (i.e., variances of the δ's or ε's)

Community observation = $\dfrac{(.73 + .89)^2}{(.73 + .89)^2 + (.47 + .21)} = .794$

Community interaction = $\dfrac{(.87 + .85 + .92)^2}{(.87 + .85 + .92)^2 + (.24 + .29 + .16)} = .909$

Community identification = $\dfrac{(.83 + .78 + .81)^2}{(.83 + .78 + .81)^2 + (.31 + .40 + .35 + .12)} = .832$

Variance extracted

Variance extracted $(\rho_v) = (\sum \lambda^2) / [(\sum \lambda^2) + \sum (\theta)]$

Where $\quad \lambda$ = indicator loadings
$\quad\quad\quad\ \theta$ = indicator error variances (i.e., variances of the δ's or ε's)

Community observation = $\dfrac{(.73)^2 + (.89)^2}{(.73)^2 + (.89)^2 + (.47 + .21)} = .661$

Community interaction = $\dfrac{(.87)^2 + (.85)^2 + (.92)^2}{(.87)^2 + (.85)^2 + (.92)^2 + (.24 + .29 + .16)} = .771$

Community identification = $\dfrac{(.83)^2 + (.78)^2 + (.81)^2}{(.83)^2 + (.78)^2 + (.81)^2 + (.31 + .40 + .35 + .12)} = .623$

APPENDIX C

SUBMODEL 3: CONSTRUCT RELIABILITY AND VARIANCE EXTRACTED
ESTIMATES

Reliability

Construct reliability $(\rho_c) = (\sum \lambda)^2 \big/ [(\sum \lambda)^2 + \sum (\theta)]$

Where λ = indicator loadings
θ = indicator error variances (i.e., variances of the δ's or ε's)

Community observation $= \dfrac{(.70+.92)^2}{(.70+.92)^2 + (.51+.15)} = .799$

Community identification $= \dfrac{(.77+.82+.88+.74)^2}{(.77+.82+.88+.74)^2 + (.40+.33+.23+.46)} = .878$

Knowledge sharing $= \dfrac{(.76+.84+.77)^2}{(.76+.84+.77)^2 + (.42+.29+.40)} = .835$

Community promotion $= \dfrac{(.80+.85+.73)^2}{(.80+.85+.73)^2 + (.36+.28+.46)} = .837$

Behavioral changes $= \dfrac{(.76+.92+.84)^2}{(.76+.92+.84)^2 + (.42+.16+.29)} = .879$

Variance extracted

Variance extracted $(\rho_v) = (\sum \lambda^2) \big/ [(\sum \lambda^2) + \sum (\theta)]$

Where λ = indicator loadings
θ = indicator error variances (i.e., variances of the δ's or ε's)

Community observation $= \dfrac{(.70)^2 + (.92)^2}{(.70)^2 + (.92)^2 + (.51+.15)} = .669$

Social affiliation $= \dfrac{(.77)^2 + (.82)^2 + (.88)^2 + (.74)^2}{(.77)^2 + (.82)^2 + (.88)^2 + (.74)^2 + (.40+.33+.23+.46)} = .645$

Knowledge sharing $= \dfrac{(.76)^2 + (.84)^2 + (.77)^2}{(.76)^2 + (.84)^2 + (.77)^2 + (.42+.29+.40)} = .628$

Community promotion $= \dfrac{(.80)^2 + (.85)^2 + (.73)^2}{(.80)^2 + (.85)^2 + (.73)^2 + (.36+.28+.46)} = .632$

Behavioral changes $= \dfrac{(.76)^2 + (.92)^2 + (.84)^2}{(.76)^2 + (.92)^2 + (.84)^2 + (.42+.16+.29)} = .709$

APPENDIX D

SURVEY QUESTIONNAIRE

**Survey on Online Travel Members' Psychological Attachment to the Community
and Member Voluntary Behaviors**

Dear Online Travel Community Members:

Welcome to the online travel community survey! We are pleased that you are willing to take the time to give us your thoughts and opinions on a variety of online travel community phenomena. Please take your time, click the appropriate response button, and when finished, hit the submit button. Your thoughts and opinions are **extremely important** to the outcome of this study. This survey should only take ten to fifteen minutes to complete.

Your participation in this survey is strictly **voluntary**. There is **no penalty** for refusal to participate and you are free to withdraw your consent and participation in this project at any time without penalty. Your responses will remain **anonymous** and **confidential**. Data will be stored in the personal computers that are isolated from any networks and accessible only to the principal investigators. The findings will be reported in a doctoral dissertation and retained for further research study.

To begin the online survey, please click:
Survey link: http://www.orgs.okstate.edu/hragsa/

If you have a strong interest in the results of this survey, we will be happy to send a summary of you the final report. Please feel free to contact the principal investigator, Hae Young Lee at (405) 332-0754 (haeyoung.lee@okstate.edu) or the faculty advisor, Dr. Woody Kim at (405) 744-8483 (kwoo@okstate.edu).

For information on subjects' right, please contact Dr. Sue C. Jacobs, IRB Chair, 415 Whitehurst Hall, (405) 744-1676.

We look forward to receiving your response in the near future. **Thank you for your cooperation.**

Sincerely,

Hae Young Lee, MBA   Woody Kim, Ph.D., MBA
Ph.D. Candidate   Assistant Professor
School of Hotel and Restaurant   School of Hotel and Restaurant
Administration   Administration
College of Human Environmental   College of Human Environmental
Sciences   Sciences

Section 1. Please indicate the degree to which you agree or disagree with each statement based on the following scale:

Example - Generally speaking, I am satisfied with my online travel community.				
1 Strongly Disagree (SD)	2 Disagree (D)	3 Neither (N)	4 Agree (A)	5 Strongly Agree (SA)

A. Overseas Travel Involvement	SD	D	N	A	SA
A-1. In general, I am interested in overseas travel.	1	2	3	4	5
A-2. Overseas travel is important to me.	1	2	3	4	5
A-3. I am involved with overseas travel.	1	2	3	4	5
A-4. Overseas travel is relevant to me.	1	2	3	4	5
A-5. Overseas travel means a lot to me.	1	2	3	4	5

B. Community Benefits					
B-1. Members share knowledge or experiences with other members of the online travel community.	1	2	3	4	5
B-2. The online travel community is useful for gathering information.	1	2	3	4	5
B-3. Members benefit from the online travel community.	1	2	3	4	5

C. Social Affiliation					
C-1. I think being close to others and relating to them is one of my favorite things.	1	2	3	4	5
C-2. I like to be around others and socialize with them.	1	2	3	4	5
C-3. I feel like I have really accomplished something valuable when I am able to get close to someone.	1	2	3	4	5
C-4. I prefer being with others rather than being alone.	1	2	3	4	5

D. Member Responsiveness					
D-1. Other members are very responsive to my posts.	1	2	3	4	5
D-2. I can always count on getting a lot of responses to my posts.	1	2	3	4	5
D-3. Other members send appropriate responses to my posts.	1	2	3	4	5

Section 2. Please indicate the degree to which you agree or disagree with each statement based on the following scale:

Example - Generally speaking, I am satisfied with my online travel community.				
1 Strongly Disagree (SD)	2 Disagree (D)	3 Neither (N)	4 Agree (A)	5 Strongly Agree (SA)

E. Observation Frequency	SD	D	N	A	SA
E-1. I often observe the community discussion without adding my comments.	1	2	3	4	5
E-2. I often watch the whole community activities without participating.	1	2	3	4	5

F. Community Interaction

F-1. I participate in the online travel community activities.	1	2	3	4	5
F-2. I interact with my travel community members.	1	2	3	4	5
F-3. I am active in the online travel community.	1	2	3	4	5

G. Perceived Membership

G-1. I feel strong ties to other members.	1	2	3	4	5
G-2. I find it easy to form a bond with other members.	1	2	3	4	5
G-3. I feel a sense of community with other members.	1	2	3	4	5
G-4. A strong feeling of camaraderie exists between me and other members.	1	2	3	4	5

H. Knowledge Sharing

H-1. I often provide useful information/knowledge for my travel community members.	1	2	3	4	5
H-2. I eagerly reply to postings by the help-seeker of my travel community.	1	2	3	4	5
H-3. In general, I share my knowledge with other travel community members.	1	2	3	4	5

I. Community Promotion

I-1. I would like to recommend my travel community to others.	1	2	3	4	5
I-2. I would like to introduce my travel community to others.	1	2	3	4	5
I-3. I will continuously talk to others about benefits of my travel community.	1	2	3	4	5

J. Behavioral Changes

J-1. The way I search for information about travel products and services has changed as a result of my being in the travel community group.	1	2	3	4	5
J-2. My travel community has influenced my behavior in some ways, such as what things I buy.	1	2	3	4	5
J-3. Where I buy travel products and services has changed as a result of my being in the online travel community.	1	2	3	4	5
J-4. The online travel community has influenced how I go about buying things.	1	2	3	4	5

Section 3. **Please tell us about your online travel community and your activities as a member.**

1. How long have you been a member of your online travel community?	[ ]
2. How many hours do you participate in your online travel community per week?	[ ]
3. How many members are there in your online travel community?	[ ]
4. How many online travel communities do you join as a member?	[ ]

Section 4. **For the following questions, please tell us about yourself.**

---

1. What is your gender?

            ☐   ☐
          Male   Female

2. What is your age group?

☐	☐	☐	☐	☐
Under 20 years old	20-29 years old	30-39 years old	40-49 years old	50+ years old

3. What is your annual income?

☐	☐	☐	☐
Less than $40,000	$40,000-$69,999	$70,000-$99,999	$100,000 or more

4. What is your highest education level?

☐	☐	☐	☐
High school or less	Some college	College graduate	Post graduate studies

---

Thank you for your help!

APPENDIX E

OKLAHOMA STATE UNIVERSITY

INSTITUTIONAL REVIEW (IRB) FORM

Oklahoma State University Institutional Review Board

Date: Tuesday, March 01, 2005

IRB Application No   HE0538

Proposal Title: Understanding Member Identification in the Online Travel Community and Member Voluntary Behaviors

Reviewed and   Exempt
Processed as:

Status Recommended by Reviewer(s): Approved   Protocol Expires: 2/28/2006

Principal
Investigator(s

Hae Young Lee   Woody Kim
84 S. Univ. Place Apt. 2   210 HES West
Stillwater, OK 74075   Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

☑ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 415 Whitehurst (phone: 405-744-5700, emct@okstate.edu).

Sincerely,

Sue C. Jacobs, Chair
Institutional Review Board

160

VITA

Hae Young Lee

Candidate for the Degree of

Doctor of Philosophy

Thesis: UNDERSTANDING MEMBER IDENTIFICATION IN THE ONLINE
TRAVEL COMMUNITIES AND MEMBER VOLUNTARY BEHAVIORS

Major Field: Human Environmental Science

Biographical:

Personal Data: Married Ha Sun Choi. Two children: Hee Kyum Lee and Justin
Hee Eon Lee.

Education: Graduated from Pyeongtaek High School, Pyeongtaek, Korea in
February 1989; received Bachelor of Business Administration degree in
Tourism Business Administration from Gyeongju University (was Korea
Tourism University), Gyeongju, Korea in February 1995; Received
Master of Business Administration in Tourism Administration from
Sejong University, Seoul, Korea in February 2002; Completed the
requirements for the Doctor of Philosophy degree from Oklahoma State
University, Stillwater, Oklahoma in December 2005.

Experience: Graduate Research Assistant, Oklahoma State University, 2002-
2005; Representative Counselor, Korean Student Association, Oklahoma
State University, 2004-2005; Graduate Treasurer, Hospitality
Administration Graduate Student Association, Oklahoma State
University, 2004-2005; Special Researcher, Feanix Data Base
Marketing, Seooul, Korea, 2000-2002; Sales and Marketing Manager,
Modetour Network, Seoul, Korea, 1994-2002.

Professional Memberships: Council on Hotel, Restaurant, and Institutional
Education (CHRIE)

Name: Hae Young Lee   Date of Degree: December, 2005

Institution: Oklahoma State University   Location: Stillwater, Oklahoma

Title of Study: UNDERSTANDING MEMBER IDENTIFICATION IN THE ONLINE
        TRAVEL COMMUNITIES AND MEMBER VOLUNTARY BEHAVIORS

Pages in Study: 160   Candidate for the Degree of Doctor of Philosophy

Major Field: Human Environmental Science

Scope and Method of Study: The purpose of this study was to: (1) identify significant
        factors influencing online travel community members to interact with other
        members; (2) explore member participation behaviors in the online community;
        and (3) reveal highly beneficial online travel member voluntary behaviors that
        occur when members develop a sense of belonging to the community. Data were
        collected from members of online travel communities by conducting web-based
        online survey. Three hundred fifty two community members from 37 travel-
        related online communities participated in the survey. Using LISREL 8.5, the
        structural model was examined in terms of model goodness-of-fit, overall
        explanatory power, and postulated causal links.

Findings and Conclusions: Results indicated that travel involvement, social affiliation,
        and community benefits are significant factors that drive people into online
        community activities. The relationship between community benefits and
        community interaction varied depending on a member's observation level.
        Results also showed that membership progresses over time by confirming the
        sequential relationship of community observation to community interaction to
        community identification. Lastly, results of this study suggested that members'
        active observations with other members strengthen their sense of belonging to the
        online travel community, resulting in favorable member voluntary behaviors such
        as knowledge sharing, community promotion, and behavioral changes.

ADVISER'S APPROVAL: Dr. Woo Gon Kim