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Explore Consumers' Experience In Using Facebook Through Mobile Devices

Shu-Chun Ho

Graduate Institute of Information and Computer Education, National Kaohsiung Normal University, Kaohsiung, Taiwan, R.O.C., sch@nkn.edu.tw

Ching-Yi Liao

Graduate Institute of Information and Computer Education, National Kaohsiung Normal University, Kaohsiung, Taiwan, R.O.C., mitora.liao@gmail.com

Pei-Chen Sun

Graduate Institute of Information and Computer Education, National Kaohsiung Normal University, Kaohsiung, Taiwan, R.O.C., sun@nkn.edu.tw

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EXPLORE CONSUMERS' EXPERIENCE IN USING FACEBOOK THROUGH MOBILE DEVICES

Shu-Chun Ho, Graduate Institute of Information and Computer Education, National Kaohsiung Normal University, Kaohsiung, Taiwan, R.O.C., sch@nknu.edu.tw

Ching-Yi Liao, Graduate Institute of Information and Computer Education, National Kaohsiung Normal University, Kaohsiung, Taiwan, R.O.C., mitora.liao@gmail.com

Pei-Chen Sun, Graduate Institute of Information and Computer Education, National Kaohsiung Normal University, Kaohsiung, Taiwan, R.O.C., sun@nknu.edu.tw

Abstract

The advance of mobile technologies and popularity of social network have transformed consumers' behaviour nowadays. People use their mobile devices to post their daily life information and locations anytime anywhere. The integration of mobile devices and social network has created an innovative platform for new business models. Thus, it is critical to explore consumers' experiences in using social network sites via their mobile devices. The objective of this paper is to understand consumers' experiences and feelings of assessing social network sites through their mobile devices. We applied Zaltman Metaphor Elicitation Technique (ZMET) to interview heavy users. There are two major contributions of this study. First, to our best knowledge, this is the first study that explores the deep thinking of users' experiences in using mobile social network services. We take the initial step to explore the users' feelings, experience, and motivations to use mobile social network services. Second, we build a theoretical framework that covers five dimensions: hedonic pleasure, pragmatic perception, social network, emotional appeal, and flow theory to explain users' experience and motivations to use mobile Facebook. Our findings also validate these five dimensions. The elicited constructs in the theoretical framework can be further developed into questionnaire items for larger scale empirical study.

Keywords: Facebook, mobile devices, social network, Zaltman Metaphor Elicitation Technique (ZMET).

1. INTRODUCTION

Since the introduction of social network sites such as MySpace, Facebook, or Twitter, they have attracted millions of users, many of whom have integrated these into their daily life. Moreover, the advance of smartphones has accelerated the adoption of social network sites. According to Facebook, there are more than 425 million monthly active users who used Facebook mobile products in December 2011 (Facebook 2011). The more sophisticated interface of mobile devices and popularity of social network sites enable users to interact with others whenever and wherever they want. Beyond the digital forums that congregating individuals, social networks create substantial value for both individuals and organizations by providing social support, boosting sales and profits, enhancing knowledge, and generating innovation (Agarwal et al. 2008). The integration of mobile devices with social network sites has generated new business models for mobile services.

The proliferation of wireless technology and mobile services in our daily life has led to a blurring of boundaries between the public and private spheres of life. The ubiquitous nature of mobile services and their impact on a person's lifestyle call into question the appropriateness of applying traditional organization-centric IT adoption models to explain the IT artifacts that are increasingly being used to satisfy both work and personal needs (Hong & Tam 2006). We take consumer-oriented perspective to explain users' motivation and experiences in using social network services via their mobile devices. The pragmatic perception, hedonic perception, emotional appeal, and flow experience underpin our theoretical lens. The objective of this study is to explore users' motivations and experiences in using Facebook through their mobile devices. We apply Zaltman Metaphor Elicitation Technique (ZMET) as our research method to interview 10 heavy users to unveil their deep thinking and experience. Specifically, our research questions are as follow.

1. Why users want to access Facebook via their mobile devices?
2. What are the roles of hedonics, pragmatism, emotional appeal, flow in explaining users' behaviors in access Facebook via their mobile devices?

This paper is organized as follows. Section 2 reviews the studies related to social network and introduce our theoretical lens to explain users' experiences in using mobile social network. Section 3 introduces research method and research design. Section 4 discusses our data analysis and findings. Section 5 concludes our theoretical and practical implications and contribution.

2. LITERATURE REVIEW

This section reviews the studies in social network, hedonic pleasure, pragmatic perception, emotional appeal, and flow theory. These studies serve as the theoretical base of our study.

2.1 Social Network

A social network is a set of nodes (e.g., people) connected by a set of ties (e.g., relations of some sort) (Stokes 1983). A social network site (SNS) is defined as a Web-based software application that allow users to connect and socialize with friends, family members, business partners, colleagues, or other persons (Gnyawali et al. 2010). A SNS refers to the web-based services that allow individuals to articulate a list of other users with whom they share a connection and view and traverse their list of connections and those made by others within the system (Boyd & Ellison 2007). Accordingly, technology is not the only competitive advantage for SNS but the ability to agglomerate the online community members. Rafaeli and Sudweeks (1997) suggested online community system needs to

facilitate the interaction among members. The interactivity provides the basis for participants to acquire benefits such as enjoyment and satisfaction with the interaction in the online community. The technological networks not only connect computers on the Internet but also link humans to form the social networks. These artifacts include Facebook, LinkedIn, MySpace, Wikipedia, YouTube, and flickr which show a growing pattern of movement through online spaces to form connections with others, build online communities, and fulfil self-expression (Kleinberg 2008).

2.2 Pragmatic Perception

Mobile device is an Information technology (IT) artifact that is not only used in the work-related environment but also extends to beyond-work environment. Mobile devices have the following characteristics that are different from other IT artifacts. First, mobile device is an extension of the self and is perceived as a personal possession that is not shared with others (Hong & Tam 2006). Second, the ubiquitous accessibility characteristic of mobile devices allows the independence of the user's location and time of access. Third, mobile devices generate not only the pragmatic value but also hedonic and enjoyment values (Hong & Tam, 2006). Pragmatics experience refers to a product or service that offers product or service-related information regarding underlying technologies or its usage (Kohler et al. 2011). Prior studies indicated that perceived usefulness and perceived ease of use are the two critical predictors of IT adoption (Venkatesh et al. 2003). These two technology perceptions indicate the importance of pragmatic values of IT artifacts. In addition, convenience is also a pragmatic perception of IT artifacts. Convenience of a service or technology includes six categories: time utilization, handiness, appropriateness, portability, accessibility, and avoidance of unpleasantness (Yale & Venkatesh 1986).

2.3 Hedonic Pleasure

Prior study suggested that there are four critical factors of website success in electronic commerce (EC): information and service quality, system use, system design, and playfulness (Liu & Arnett 2000). Web site designers have emphasized the importance of playfulness (Liu & Arnett 2000). Playfulness is an intrinsic belief or motive which is shaped from the individual's experiences with the environment (Moon & Kim 2001). Web developers and online business need to cultivate hedonic pleasure in the Web site by motivating customers to participate, promoting customers' excitement and concentration, and creating attracting features to allure customers and to make them enjoy their visit. The emerging and specific nature of virtual worlds calls for additional principles (Kohler et al. 2011). The hedonic component captures this dimension. The hedonic component encompasses both the interaction with other participants and technologies (Nambisan & Nambisan 2008). Prior studies suggested that the experience in online community needs to feel like entertainment (Kohler et al. 2011). Playfulness is a way to spur interest among participants in the online community because playfulness can absorb users in the activity. The participants' interactions in the virtual environment can be mentally stimulating, entertaining, and creating a source of pleasure or enjoyment (Nambisan & Nambisan 2008).

2.4 Emotional Appeal

Emotional appeal attempts to create positive or negative emotions to motivate consumers purchase intentions (Kotler 1991). Positive emotions include humor, love, happy, and etc. Negative emotions contain fear, loneliness, guilty, and etc. A lot of human behaviour driven by intrinsic is reflected by emotional responses. When individuals use mobile devices to perform social network activities, they may have both positive and negative emotions. Mobile Facebook users may want to build their self-identity by showing their excellence or professional. To form self-identity (Michael 1995), individuals tend to learn from the important others, imitate, or gain others' response and approval. In addition, people visit SNS to interact socially with others, to meet new friends, to kill time, or for entertainment (Flatherty et al. 1998). When the members in the virtual social communities share the same value or ideas, they will create belongings and social support of that social network and further

results in more intensive interactions and communications (Cobb 1976). Social belongingness may also lead to negative emotions such as social anxiety (Watson & Friend 1969), social distress, social avoidance, or the fear of receiving negative evaluations from others (Leary & Kowalski 1995; Leary 1983; Sherry et al. 1998). Gross et al. (2002) indicated that individuals who reported feeling lonely or social anxious at school were tend to use instant messages more with people they don't know well.

2.5 Flow Theory

The Helsinki Institute for Information Technology (HIIT) and Intel Labs demonstrated that Smartphone users develop the habit of frequently checking their phones for e-mail, social media, and news (HIIT & Intel Labs 2011). Popular media has raised the issue of repetitive and obsessive use of smartphones. A typical checking lasts less than 30 seconds and involves opening the screen lock and accessing a single application. The obsessive habits of some activities can be considered as the experience of "flow". Flow refers to that individuals feel in control of their actions, masters of their own fate...they feel a sense of exhilaration, a deep sense of enjoyment (Csikszentmihalyi 1977, p3). Flow is a continuous state ranging from none to intense (Trevino & Webster 1992, p540). Flow represents the extent to which either the individual perceives a feeling of control over the computer interaction, or the individuals perceive that their attention is focused on the interaction (Trevino & Webster 1992). Flow experience is defined as the state occurring while an individual surfs the Internet, which is (1) characterized by a seamless progression of responses facilitated by machine interactivity, (2) intrinsically enjoyable, (3) accompanied by a loss of self-consciousness, and (4) self-reinforcing (Hoffman & Novak 1996).

3. RESEARCH METHOD

3.1 Zaltman Metaphor Elicitation Technique

We use the Zaltman Metaphor Elicitation Technique (ZMET) to better understand the users' experiences of using their mobile devices to access Facebook for social network activities. ZMET is a new methodology that designs to understand customers' thoughts and feelings by eliciting metaphors (Zaltman & Coulter 1995; Zaltman 1997; Zaltman 2003). It was developed by Zaltman in 1995 and been applied in marketing area. However, it has not been introduced in the IS area yet. Because ZMET uses multiple qualitative research techniques to probe consumer thinking, it has the strength to elicit latent and emerging needs and further create the opportunities for new business models in mobile social network services.

3.2 Research Design and Preparations of ZMET

The preparations and processes of ZMET are as follows. First, two interviewers are trained in the elicitation techniques to conduct interviews, elicit constructs, and build mental map. Second, we recruit participants who are heavy users of mobile social network services and inform all of the requirements of this study. The candidates were requested to fill in a survey of personal involvement inventory (PII) measurement that developed by Zaichkowsky (1994). If the participants have scores among 51 to 70, they are considered as heavy involvement of mobile Facebook users. If the candidates are qualified as highly involvement in using mobile social network services and willing to participate in, we will pay \$25 dollars for participation fee. Third, participants are requested to take photos or collect a minimum of 12 pictures of images that indicate what the mobile social network services mean to them. The use of pictures as the stimuli for the ZMET interview is grounded in the fact that much communication is nonverbal (Coulter et al. 2001). Forth, after 7 to 10 days, we conduct an in-depth personal interview that uses qualitative techniques to tap verbal constructs. Last, after analyzing the interview texts, we construct the mental map of each participant and a consensus map of all participants.

3.3 The Descriptive Statistics of Informants

We recruited and interviewed 10 informants in this study. 4 to 5 in-depth interviews applying ZMET to identify the core themes can provide up to 90% of the information available from a larger set of interviews (Zaltman 1997; Zaltman & Coulter 1995). The occupations of 10 informants range from sales, engineer, project manager, teacher, and etc. They all have higher than 52 PII test scores which indicate they have high involvement of using mobile Facebook. They are in the age among 26 and 38. Table 1 shows their demographics and descriptive statistics.

Participant	Occupation	Age	Gender	Personal Income (\$10000 /Month)	Use frequency (hr/day)	Using Mobile Facebook (hr/day)	PII Test Score
A001	School Assistant	33	Female	3.6	18	10	67
A002	Teacher	38	Male	5	1	0.5	58
A003	Network management	32	Male	3	24	24	65
A004	Insurance Sales	26	Female	5	4	4	63
A005	Project Manager	31	Female	4	2	2	56
A006	Insurance Manager	33	Female	5	24	6	69
A007	Secretary	31	Female	3	5	3	60
A008	Internet Marketing	31	Male	6	24	2	61
A009	School Assistant	38	Female	3	4	4	52
A010	Internet Sales	30	Male	3	24	12	66

Table 1. The Demographics of Informants

We applied Kelly Repertory Grid Technique and Laddering Technique (Kelly, 1963; Reynolds & Gutman, 1988) to elicit constructs from the 10 interview texts. We further used a qualitative data analysis tool, NVivo 9, to code and analyze the interview texts. Overall, we elicited the most frequently appeared 26 constructs. Table 2 shows the 26 constructs and their related frequency.

Number	Construct	Frequency	Number	Construct	Frequency
A	Sharing	9	N	Intimacy	8
B	Fun, playfulness	8	O	Privacy	3
C	Creativity, Innovation	2	P	Habit	4
D	Click "Like!"	5	Q	Convenience	8
E	Get attention	6	R	Broadcast	3
F	Create personal image	2	S	Hedonic	7
G	Group buying	4	T	Dependence	3
H	Find friends	4	U	Accumulate information	4
I	Real time	8	V	Immersion	2
J	Social approval	4	W	Inspire	4
K	Reduce pressure	4	X	Check-in	1
L	Appeal	4	Y	Organize events	9
M	Loneliness	5	Z	Social anxiety	4

Table 2. Statistics of Eliciting Constructs

4. DATA ANALYSIS

4.1 ZMET Process and Analysis

There are 10 steps of ZMET. We summarized the findings in each process in this session by showing some examples.

4.1.1 Step1. Story Telling

The informants were requested to collect 8 to 12 pictures that can best represent their feelings and experiences of using Facebook via their mobile devices. Figure 1 shows the photos that are collected by the informants. Each informant tells the story of each picture.



Figure 1. *Collection of Informants' Images in Using Mobile Devices to Access Facebook*

From the pictures collected from the informants, they describe their experiences of using Facebook through their mobile devices. The following are some examples of their description from the transcripts.

"We can easily see that people like to post "I am hungry." in the Facebook. I am hungry is a common and trivial thing in our life. However, you can see that people still respond to the trivial things in Facebook. It is life. It is so convenient to access Facebook through mobile phones because it is so efficient and quick. You can gain response fast."

Another example, an informant indicated that she loves traveling and likes to "check in" to record every place that she had visited. When she "checks in" via her mobile phone, she felt the achievement to share it on the Facebook instantly. She enjoyed more to "check in" when she travelled abroad because it is special and unique.

4.1.2 Step2. Missing Images

Step 2 requests the informants to describe the missing images of using Facebook via their mobile phones. Are there images that they can't find to represent their feelings? Informant 002 pointed out that he can't find a picture that has the feeling of Internet chatting room. An image that can represent that many people can share information, chat with each other no matter if they know each other, or someone can keep salient and just listen to others chatting. This image represents the comfort and stress less atmosphere of using Facebook.

4.1.3 Step3 and 4. Sorting Task and Construct Elicitation

Step 3 and 4 request informants to categorize pictures into groups and label each category. Further use a construct to represent the theme of the group of pictures. Table 3 shows the examples of categories

of images and their description. An informant categorizes images into three groups: distance, life, and experience. The other informant categorizes images into four groups: demand, overload, a straight hit, and distance. One informant categorizes 6 categories: identity, interpersonal relationships, network, trajectory, the power of social network, and revolution of social network.

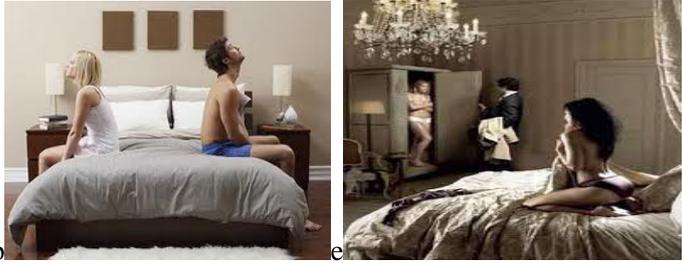
Category of Images	Description of this Category
A016_Group1: 	Category: Interpersonal relationship Description: <i>There is a lack of communications among individuals. People use mobile phones and Facebook to communicate makes the communication and network so wired and amazing. For those who had never talked stay in touch and for those may not happen occur.</i>

Table 3. Categories of Informants' Images

4.1.4 Step5. Most Representative Picture

Step 5 requests the informants to find out the most representative picture of their feeling in accessing Facebook via their mobile devices. Informant A010 picks up a picture took with her colleagues in Korea (See Table 4). It is very expensive for international roaming. When they had dinner in a restaurant, they found there is free Wi-Fi and all of a sudden, everyone all used their mobile phones to take pictures and posted in the Facebook right away. It is common for friends' get together. People are getting together with friends but also checking Facebook via mobile phones in the meanwhile. It has become a habit for some people. They can't help to check Facebook via their mobile devices. If they can't do it, they will feel uncomfortable and anxious.

Image	Image Description
A010_d.jpg 	<i>It is not easy to get together with friends for dinner. Friends chatted during dinner time. However, after a while, everyone was checking their mobile phones and became salient. It is wired that people get together to network but also want to watch others posts and dynamics in Facebook. (A010)</i>

Table 4. The Most Representative Picture of Participants' Images

4.1.5 Step 6 and 7. Opposite Images and Sensory Images

Step 6 requests the informants to describe the opposite images of the interview theme. Informant A006 pointed out her opposite image of using Facebook through mobile devices is a basement. There is no signal and dark in the basement that represents no connection of the world. Step 7 requests the informants to describe their sensory images (taste, touch, hearing, smelling, look, and feeling) of using Facebook through their mobile devices.

4.1.6 Step8. The Mental Map

Step 8 encourages the interviewer to review all of the constructs and to confirm with the informants the accuracy of all constructs or missing constructs. After the confirmation, researchers create a mental map to depict the theme of interview. A mental map is represented by "originator construct

→connector construct → destination construct." For example, the mental map of informant 10 can be depicted in the following settings (See Figure 2). First, he uses mobile phones to post messages, videos, pictures and current locations because of the fast and efficient communication speed. Second, when he was in the bad mood or not happy in the workplace, Facebook is a virtual platform that he can get comforted or care from others. However, the instant improvisation of emotions without considering the consequences may result in the intense interpersonal relationship. Third, mobile phones have the characteristics of ubiquitous access, integration with many applications, and network effects. These characteristics allow users to assemble friends in Facebook through their mobile phones. The response time of the congregation in Facebook is amazing. Forth, using my mobile phone to browse Facebook and to chat with friends has become my daily habit. The addiction of using mobile phone to access Facebook can result in anxiety and flow experience.

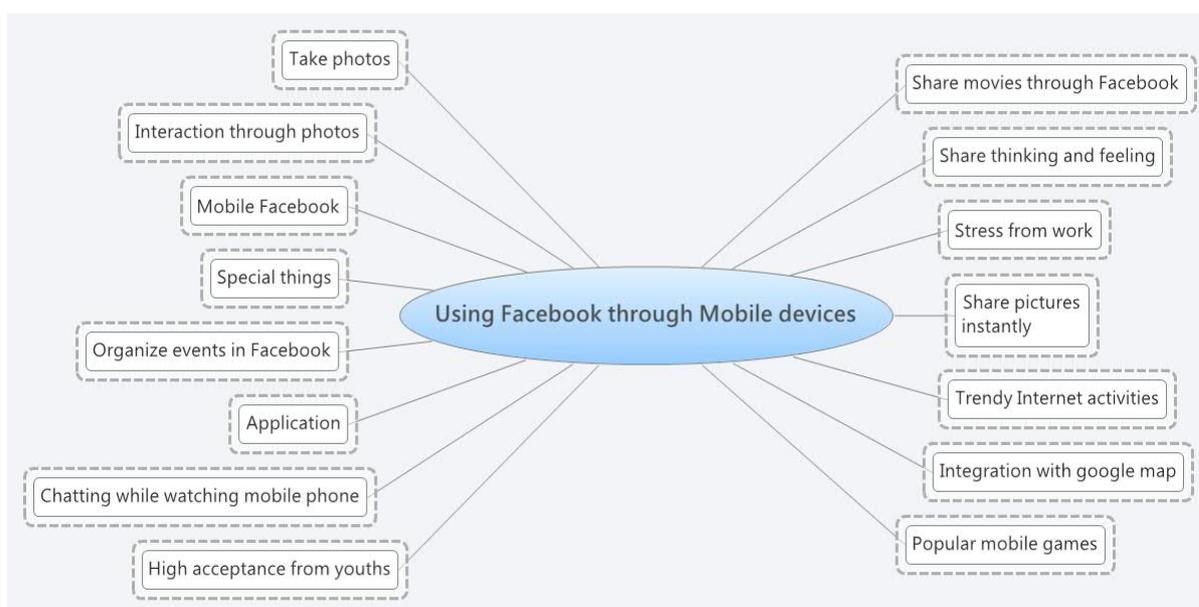


Figure 2. The Mental Map of Informant 10

4.1.7 Step 9 and Step 10. The Summary Image and The Vignette

Step 9 asks the informants to piece together a summary image of using Facebook through their mobile devices. Step 10 requests the informants to write a vignette that best represent the interview them.

4.2 Consensus Map

After the 10 steps of ZMET, we elicit 26 constructs from our 10 interviews. The elicitation of 26 constructs are based on the convergent rule that are more than 1/3 of the informants pointed out that construct and more than 1/4 of the informants demonstrate the linking constructs (Zaltman 1995). Based on these constructs, we create a consensus map of all interviewees that best represent the thinking from the majority of the informants. A consensus map includes originator constructs, connector constructs, and destination constructs.

The experience of using Facebook through mobile devices can be concluded with five *destination constructs*: hedonic, pragmatic, emotional appeal, flow, and social network. These five *destination constructs* in the consensus map are concluded from five connector constructs: Share, Immersion, Organize events, Convenience, and Intimacy. The 26 *originator constructs* include "Fun and playfulness", "Creativity and innovation", "Click Like", "Inspire", "Create personal image", "Dependence", "Habit", "Check in", "Social approval", "Broadcast", "Group buying", "Find friends",

"Real time", "Accumulate information", "Privacy", "Appeal", "Get attention", "Loneliness", "Reduce pressure", and "Social anxiety". These 26 originator constructs can be categorized into 5 *connector constructs*: Sharing, Immersion, Organize events, Convenience, and Intimacy.

The most frequent appeared construct in the consensus map is "Sharing". There are 9 informants indicate the concept of "sharing" that demonstrates that sharing personal information and pictures is a critical element in social network sites. For example, we elicited the construct of "Sharing" from the texts of the informants. For example,

"I have a desire to share my visit of a place. This kind of feeling reflects that we are living in a fast tempo and have quite a few chances to talk with friends with a peaceful mind. People frequently brush against a person and have no chance to communicate. Facebook becomes an alternative virtual platform to share. Sharing what you did lately becomes a topic between friends."

There are 8 informants all have the feeling of "Fun and playfulness" when they use their mobile phone to access Facebook. There are 7 informants have the feeling of "Real time" when they use mobile phone to access Facebook. Mobile phones have the capability to communicate any time and anywhere and the further integration with Facebook increases the richness of communication because people can post texts as well as images. For example, the "Real time" construct is elicited from the texts from an informant.

"Most of my friends are in other cities or on the Internet. So, I interact and share information with my friends through Facebook. Sometime I use Facebook primarily because I want to record my life and share them with my friends as well. It is great that I can access Facebook through my mobile phones because it allows me to have real time communication with friends."

5. DISCUSSION AND CONCLUSION

This section concludes our implications, theoretical and practical contribution, and directions of future research.

5.1 Implications

To understand the users' feelings and motivations of using Facebook through their mobile devices, we apply ZMET to elicit the critical constructs. ZMET allows us to acquire diverse and rich thinking and imagination of heavy mobile social network service users. Based on the literature review, we build a framework to explain users' experiences and feelings of using their mobile devices to access Facebook. The theoretical contributions of our findings are as following. First, *hedonic pleasure* is a critical element of using Facebook through mobile devices. The hedonic pleasure shows that users like novel, creative, fun, and playful things and they click "Like" for these things. "Click "Like!"" attracts users and creates interests for the community in the social network sites. Entertaining topics or gossip create more interests to the users. Second, *pragmatic perception* is an important element. Mobile Internet brings the great convenience and real time characteristics. Most of our informants enjoy use mobile phones to access Facebook because of the real time characteristics. They can post their locations and check in the places that have great food. Third, the third critical element is *social appeal*. We can find that users send messages to create the care and concern feelings to their friends. The community members depend on the social interactions in the virtual platform continuously. They feel valuable and respected by the social support and social approval in the platform. The feeling of social approval encourages them to participate more in the social network. Users want to show their uniqueness, superiority, and professional in virtual social platform. Users utilize the social interactions and

exploration to build their self-identity and create their image in the society. Since "privacy" is always a controversial issue in the virtual community, some users have negative impression of building images to others and sometimes even create social anxiety. Users' social anxiety may result from their concern about others' antipathy to their posted messages. The fourth critical element of using mobile Facebook is *flow*. The intense interactions in the social network create happiness and enjoyment. However, when the users can't help to access mobile Facebook and becomes a daily, hourly, or even secondly habit, there is not only happiness but also anxiety of using mobile Facebook. The fifth critical element is *social network*. The instance sharing of news, information, locations, and personal information create the necessarily and value of social network. The above findings reveal the users' experience of using Facebook through mobile devices in Taiwan. These findings identify the critical constructs that may reflect the particular cultural issues of users in Taiwan.

5.2 Contribution

Overall, our findings provide a clear picture of users' feelings, experience, and motivation to access Facebook through their mobile devices. There are three major contributions of this study. First, to our best knowledge, this is the first study that explores the deep thinking of users' experience of using mobile social network services. This study can serve as a pilot study of future survey research. Second, this study integrates the topic with the mobile phones and social network services which are rare studies in this topic. Since mobile devices and social network services are both attracting research topics, this study takes the initial step to explore the users' feelings, experience, and motivations to use mobile social network services. Third, we build a theoretical framework that covers five dimensions: hedonic pleasure, pragmatic perception, social network, emotional appeal, and flow to explain users' experience and motivations to use mobile Facebook. Our findings also validate these five dimensions. The elicited constructs in the theoretical framework can be further developed into questionnaire items for larger scale empirical study. In addition, our findings provide two practical contributions. First, the pragmatic perceptions (such as convenience or real time) are critical consideration as well as the emotional appeal (such as image creation or a channel to decrease pressure). Based on our findings, the social network sites managers can create more services that the users care most about. The practitioners can also segment the users into two types: pragmatic and hedonic considerations. Second, people who like to use mobile phone to access social network sites have the characteristics of pursuing fun and playfulness and like innovation and creativity. Marketers of social network sites and mobile devices manufacturers can develop tailored marketing strategies for future mobile services and devices.

5.3 Limitation and Future Research

Although we have tried our best to conduct this research, there are some limitations of this research. We will also point out the directions of future research. First, we only examine the users of Facebook but not those of other social network sites. Future research can investigate the users' thinking in other social network sites. Second, we only study the heavy users experience but not non-users. It will be interesting to compare the difference of heavy users and non-users' experience. Third, we identified the major constructs of using mobile social network. It will be an interesting research topic to validate our constructs by larger scale survey research. Forth, we explore users' behavior in Taiwan and there may be cultural difference among countries. Future research can focused on difference in countries.

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