

**Why Taiwanese students use Instant Messaging:  
A uses and gratifications approach**

**by**

**Ko-Jung Chen**

A thesis submitted to the graduate faculty  
in partial fulfillment of the requirements for the degree of  
MASTER OF SCIENCE

Major: Journalism and Mass Communication

Program of Study Committee:  
Daniela V. Dimitrova, Major Professor  
Suman Lee  
Brian E. Mennecke

Iowa State University

Ames, Iowa

2008

Copyright © Ko-Jung Chen, 2008. All rights reserved.

UMI Number: 1453133

Copyright 2008 by  
Chen, Ko-Jung

All rights reserved.

UMI<sup>®</sup>

---

UMI Microform 1453133

Copyright 2008 by ProQuest Information and Learning Company.  
All rights reserved. This microform edition is protected against  
unauthorized copying under Title 17, United States Code.

---

ProQuest Information and Learning Company  
300 North Zeeb Road  
P.O. Box 1346  
Ann Arbor, MI 48106-1346

**TABLE OF CONTENTS**

LIST OF FIGURES	iv
LIST OF TABLES	v
ABSTRACT	vi
CHAPTER 1. INTRODUCTION	1
CHAPTER 2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK	5
Uses and Gratifications and the Internet	11
Motivations	14
Gender and Use of Communication technology	21
Instant Messaging	22
Research Questions	28
CHAPTER 3. METHODOLOGY	30
Study Design	30
Pilot Discussion	32
Sampling	33
Questionnaire	36
Data Analysis	45
CHAPTER 4. RESULTS	47
Descriptive Statistics	47
Respondent Demographics	48
Internet and IM Use	49
Frequency of Gratifications Sought	54
Frequency of Gratifications Obtained	56
Gratifications Sought and Obtained from IM Use	58
Gratifications and IM Use	70

Gender, Gratifications, and IM Use	75
CHAPTER 5. DISCUSSION	78
Conclusions	83
Implications	84
Limitations and Future Research	87
REFERENCES	93
APPENDIX A. QUESTIONNAIRE	101
APPENDIX B. QUESTIONNAIRE CODEBOOK	110
ACKNOWLEDGMENTS	124

**LIST OF FIGURES**

Figure 1	Number of global IM accounts	26
Figure 2	Length of Internet use	50
Figure 3	Number of users of IM provider	51
Figure 4	Length of IM use	51
Figure 5	Frequency of IM use per week	52
Figure 6	First learn about IM	53
Figure 7	Categories of IM contact list	54

## LIST OF TABLES

Table 1	Motivations identified in prior U&G studies	18
Table 2	Motivations applied in this study	21
Table 3	Motivations determined by pilot discussion	33
Table 4	Number of respondents dropped or filtered	47
Table 5	Profile of respondents	48
Table 6	Frequency of gratifications sought	55
Table 7	Frequency of gratifications obtained	57
Table 8	Rotated factor loadings of gratifications sought for IM use	59
Table 9	Rotated factor loadings of gratifications obtained for IM use	65
	Pearson correlations:	
Table 10	IM gratifications obtained and Frequency of IM use pattern	72
	Hierarchical regression analysis:	
Table 11	Demographics and gratifications obtained on IM use	74
	Independent-sample <i>t</i> -test: Gender differences in gratifications	
Table 12	obtained and pattern of IM use	76

## ABSTRACT

The goal of this study was to investigate the gratifications Taiwanese students sought and obtained from Instant Messaging use (IM). This study also examined the relationship among gratifications Taiwanese students obtained, gender, and their frequency of IM use. A 13-motivation with 37 statements scale derived from previous uses and gratifications studies is presented along with the demographic information as an instrument to determine Taiwanese students' gratifications from IM use. The participants were 406 undergraduate, graduate, and doctoral college students, who are the primary users of this new interactive communication technology. The results indicated there were 10 gratifications sought (*Flexibility, Escape, Convenience, Companionship, Socialization, Control, Habit, Identity, Utility, and Surveillance*) and nine gratifications obtained (*Convenience, Escape, Companionship, Socialization, Mobility, Identity, Surveillance, Control, and Utility*) from IM use. Gratifications obtained were positively associated with the frequency of IM use. Gender differences that lead to different gratifications obtained and frequency of IM use per week were also found.

## **CHAPTER 1**

### **INTRODUCTION**

The Internet is considered one of the most revolutionary, technological advances of communication in the 20<sup>th</sup> century. It has spawned various ways by which people and groups communicate with one another digitally. Examples of these are the e-mail system, Web logs or blogs, the bulletin board systems (BBS) and, more recently, Instant Messaging (IM).

Instant Messaging is a new mode of communicating that allows conversations and dialogues to occur in real-time. It works across platforms; it is also inexpensive and is highly efficient.

Because of these characteristics, IM has diffused and disseminated rapidly over the last two years. The attributes of IM, technology experts agree, will make it an indispensable and principal communication tool in the near future. In fact, it is expected to replace traditional media such as, the telephone or e-mail, as the major vehicles for interpersonal communication.

According to an iResearch Report, until the end of 2005, there were 8.67 billion users utilizing IM accounts throughout the world and the numbers of IM accounts were expected to keep increasing in the near future. Moreover, the Pew Internet & American Life Project reports that of the total number of Americans who go online, which constitutes 42% of the total population; more than 53 million use the IM software. Among these IM users, the most



avid are young people who belong to what is popularly known as Generation Y. Roughly 57% of Generation Y members, those 18-27 year olds, reported using IM more frequently than email compared to only 16 % of those who belong to Generation X, age 18 to 39 years, who use IM more often than emails. That Generation Y members devote more time to IM is vividly shown by the percentage of people in this age group who have made IM the medium of choice compared to emails. Avid IM users comprise only 18% of the Trailing Boomers, 18 % of the Leading Boomers, and less than one percent of the Mature and After Work generations (Pew Internet & American Life Project, year). These figures imply that there is disparity in email and IM users across generations. It can also be surmised that these different age groups also use IM differently.

In Taiwan, the growth of IM has also been significant. A recent study showed that of the 66% of the entire population who go online, about 6.5 million employ IM. Similar to the U.S., of the people who use it, the study shows that students are the most avid: 99 % of Internet users in the 15-19 age bracket use IM; 97% in the 20-25 group; 94% in the 26-29 bracket; 84% in the 30-34 age category, and 81% in the 35-39 age group. In addition, Grinter and Palen (2002) note that the number of teenage IM users is rising rapidly, and has been a recent object of media attention for their promising insights regarding general communication

technology use. These insights fall under three categories.

First, teenage IM adoption represents a significant entry of collaborative information technologies into the home. Secondly, because most teenagers are students that have little experience with technologies conveying presence between peers, they must learn what it means to be simultaneously private and public as a consequence of recent strides in technology use. Finally, teenagers constitute the workforce of the future, and the communication habits they develop now may indicate what can be expected from them as adults.

This study, therefore, focuses on the population of prevalent IM, college, graduate, and doctoral students. This study, applied the Uses and Gratifications theory to investigate why Taiwanese students use IM. Scholars generally agree that, the U&G theory is particularly applicable to the study of the diffusion and impact of new communication technologies (i.e., Becker & Schoenbach, 1989; Johnson & Kaye, 2003; LaRose, Mastro, & Eastin, 2001; Lin, 1999; Morris & Ogan, 1996; Papacharissi & Rubin, 2000; Perse & Dunn, 1998; Rafaeli, 1986; Ruggiero, 2000; Stafford & Gonier, 2004; Weister, 2001; Williams, Stover, & Grant, 1994).

Since IM is relatively new, few empirical studies have been done to understand the

reasons why this mode of communicating has diffused rapidly over time and geographical space. Of the few studies that have examined this aspect so far, even less attention has been paid to non-English speaking countries. Existing empirical studies examining IM, mostly explored its use in the workplace (i.e, Bradner, Kellogg, & Erickson, 1999; Herbsleb, et al., 2002; Isaacs, Walendowski, & Ranganathan, 2002; Nardi, Whittaker, & Bradner, 2000; Tang, Yankelovich, Begole, Van Kleek, Li, & Bhalodia, 2001; Volda, Newstetter, & Mynatt, 2002).

It has been said that most communication technologies have converged on IM. How does that apply in the way college students use this technology? The goal of this study is to understand how Taiwanese students use this “uniquely converged” communication technology. Are these uses related to their demographic, such as gender? Or are these uses solely for entertainment purposes?

The findings of this study should help IM providers equip their product with more features, which can motivate people to use this ability in ways that fit e-commerce models. The study also aims to help establish a research foundation for the empirical examination of the diffusion and impact of IM as a new interactive medium. By conducting this investigation among Taiwanese students, who may have a unique gender and technological ethos, this study hopes to add a demographic dimension to the application of uses and gratifications.

## CHAPTER 2

### LITERATURE REVIEW AND THEORETICAL FRAMEWORK

The Uses and Gratifications (U&G) approach has been viewed by its proponents as a “welcome antidote” to early direct effects models by examining what people do with the media, rather than what the media does with the people (Katz, 1959). This approach, seen as a logical extension and refinement of the analysis of message effect, has been welcomed by researchers because it offers an escape from “the dead end” of traditional hypodermic needle effect analysis (McLeod & Becker, 1981). Therefore, the U&G approach has been applied to numerous studies of different conventional media (e.g. Palmgreen, Wenner, & Rosengren, 1985).

The primary assumption of the U&G approach is that audience members actively seek media messages to satisfy certain needs; a change from earlier assumptions that audience members were an undifferentiated mass that passively receives media messages. In contrast to the hypodermic needle theory, which states that audience members were a homogeneous mass that receive media messages passively, the U&G approach seeks to examine the audience members’ different social and psychological needs that are gratified and fulfilled by actively using or exposing themselves to different media. In other words, Uses and Gratifications tries to explain the way in which audience members use communications to

satisfy their needs or achieve their goals based on the audience members' own account.

Therefore, the approach provides an audience-orientated view of media effects.

Katz et al. (1974) outline the basic assumptions of Uses and Gratifications. These are: (1) the audience consists of active information seekers; (2) an individual selects a medium to meet a certain need; (3) the media provide only a portion of an individual's communication needs; (4) the audience can accurately express its interests and motivations for seeking information; and (5) audience orientation should be explored on its own terms in the form of self-reports.

McLeod and Becker (1981) similarly list the same assumptions: (1) the audience is active; (2) media use is goal-directed; (3) media consumption can fill a wide range of needs; (4) people have enough self-awareness to know and articulate their reasons for using the media; and (5) gratifications have their origins in media content, exposure and the social context within which the exposure takes place.

Early studies, including those of Lazarsfeld and Stanton (1942) and Suchman (1942), examined gratifications derived from watching soap operas and listening to music over the radio; Wolfe and Fiske's (1949) research on children's interests in comic books and Berelson's (1949) study of newspapers' functions follow the U&G approach to understand what

gratifications people derive from media use. Although these previous studies that employed a fundamentally methodological approach were based on the open-ended questions and statements about media functions answered by respondents, they failed to: (1) explore the links between media use and the gratifications people get from it; (2) seek the psychological or sociological origins of needs; (3) and investigate the correlations among various media functions. Thus, these early studies were primarily behaviorist and individualist in their methodological tendencies with little theoretical coherence (McQuail, 1994).

During the 1940s and 1950s, the U&G-based studies moved from the laboratory, to the field, and toward a focus on the effects of mass media on political behavior. A study of voter behavior, conducted by Lazarsfeld et al. (1948) at Columbia University, suggested that the media played a weak role in election decisions compared with interpersonal influences. In other words, this study suggested that audience members are defensive and active in that they select supporting information and avoid contradicting information. The U&G approach applies the same concept of functionalism. Furthermore, it shifts attention from the mass media and their content, to an increased power of the audience. Katz (1979) argued that in the voting study, the audience actively sought consonant information and avoided discrepant ones. This argument contradicted the U&G assumption that people satisfy their needs or

interests by their use of the media. Consequently, Katz et al. (1974) identified and organized future research focus in this area into systematic and logical steps. According to them, researchers must understand (1) the social and psychological origins of (2) needs, which generate (3) expectations of (4) the mass media or other sources, which lead to (5) differential patterns of media exposure (or engagement in other activities), resulting in (6) need gratifications and (7) other consequences, perhaps mostly unintended ones.

During the 1950s and 1960s, researchers identified and operationalized many social and psychological variables that were presumed to be the precursors of different patterns of gratifications consumption (Wimmer & Dominick, 1994). Ruggiero (2000) suggested that the studies in this period reflected a shift from the traditional effects model of mass media research to a more functionalist perspective. During the 1970s, the U&G approach has been increasingly applied by mass communication researchers since the 1974 publication of the Blumler and Katz's *The Uses of Mass Communication*, which summarized many studies using the U&G approach. Moreover, researchers examined audience motivations and developed additional typologies of motivations to gratify audience's social and psychological needs. For example, a study by Palmgreen and Rayburn (1979) of viewer's exposure to public television investigated gratifications sought and gratifications obtained or received.

During the 1980s and 1990s, researchers attempted to establish U&G as a legitimated theory. Among them is Windah (1981), who argued that the major difference between traditional effects approaches and the U&G approach is that the former is concerned with the communicator perspective while the latter examines that of the audience. Similarly, Rubin (1983) observed that researchers at the time were beginning to generate a valid response to the criticism that U&G lacks theoretical basis. At that point, U&G researchers have systematically tried to (1) conduct modified replications or extensions of previous studies, (2) refine their methodology, (3) comparatively analyze the findings of separate investigations, and (4) treat mass media use as an integrated communication and social phenomenon (Rubin, 1983). Although researchers have continued to refine their perspective into a more comprehensive theoretical grounding, critics still constantly attacked the theoretical justifications of the approach.

Even U&G researchers have acknowledged that several flaws continued to bedevil this conceptual theoretical framework. First, by focusing on audience consumption they note that U&G is often too individualistic (i.e. Elliott, 1974), which makes it difficult to predict media use at the group or societal level. Second, previous studies have individually formed typologies of motivations, which prevented conceptual development. Third, the theory's



central concepts, such as social and psychological needs, motivations, behaviors, and consequences remained unclear. Fourth, no unified definitions of these central concepts have been offered. Fifth, the fundamentals of the U&G approach, the concept of active audience and the validity of motivations, determined by self-report data assumed by researchers, were still remain suspected.

Until the 21<sup>st</sup> century, the U&G theory has been treated as the “Uses and Gratifications approach” because of the widely held view that it lacks “theoretical pretensions or methodological commitment (Katz, Blumler, & Gurevitch, 1974). But the introduction of new communication technology, especially for telecommunication and the online purposes, has revived interest in the U&G theory. The deregulation of the communications industry and the convergence of mass media and digital technology, have altered the exposure patterns of many media consumers (Finn, 1997). The approach has been applied to explain the use of a wide range of new communication technologies because the situation offers more and more media choices and motivations, making satisfaction a very important component of audience analysis. Rogers (1986) asserted that the attributes of new communication technologies make it difficult, however, to investigate their effects using conventional methodologies or models.

For these reasons, some communication researchers have suggested that traditional U&G

models may still provide a useful framework with which to study the Internet and other new media communication technologies (i.e., December, 1996; Kuehn, 1994; Morris & Ogan, 1996). For such purpose, U&G should serve as a legitimate theory because it has been used to study how and why people use the emerging mass communication media (i.e., newspapers, radio, television) especially during their initial stages of diffusion (Ruggiero, 2000).

Ruggiero also predicted that the number of topics for U&G investigation will multiply as new communication technologies rapidly materialize.

### **Uses and gratifications and the Internet**

Researchers, such as Dreze and Zufryden (1997) and Stafford and Stafford (1998), agree with the idea that society is moving away from traditional mass-exposure media in favor of the interactive interfaces offered by the Internet. The number of Internet users has doubled in the past six years, resulting in its exponential growth. Therefore, many predict that the Internet will soon be as widely used as the television or the telephone (Quarterman & Carl-Mitchell, 1993). The U&G theory can be applied to a wide range of conventional mass media, as well as to interpersonal communication (Rubin, Perse, & Barbato, 1988) and new communication technologies such as the Internet (Kaye & Johnson, 2002; LaRose, Mastro, & Eastin, 2001; Papacharissi & Rubin, 2000; Perse & Dunn, 1998; Stafford & Gonier, 2004).

Newhagen and Rafaeli (1996) sorted out five attributes of new communication technologies like the Internet; they are multimedia functional, involve packet switching, are highly interactive, they function under high levels of hypertextuality, and they are valued for their synchronicity. The U&G theory can help understand the uses of such attributes (Williams, Strover & Grant, 1994), but a clearer understanding of the relationship between the individual user and the technology is needed before their effects can be evaluated (Newhagen & Rafaeli, 1996).

With its emphasis on active media use and its ability to span both mass and interpersonal communication, U&G was initially regarded as a natural paradigm for understanding the Internet (Morris & Ogan, 1996). Many contemporary communication researchers see the Internet as lying in a continuum between mass and interpersonal communication (Ruggiero, 2000). Cowles (1989), for example, found that interactive media (i.e., teletext & videotext) possess more personal characteristics than non-interactive electronic media. She submits that the U&G theory is mature enough to be applied to research involving new media and that such research “might best occur within the context of an individual’s total media environment” (p. 83). James, Wotring and Forrest (1995) note that the Internet communication tools, such as electronic bulletin boards, fulfill many expectations of both

mass and interpersonal communication. Further, Dicken-Garcia (1998) contends that the Internet places stronger emphasis on informal, interpersonal conversation than has been true of earlier media. Thus, the Internet offers both interactive/social and information/task-orientation dimensions for users. For that matter, the needs the Internet fulfills may not be too different from the needs met by more traditional interpersonal and media channels (Armstrong & Rubin, 1989). Although different media can satisfy different needs, traditional typologies of mass media can also translate to the use of the Internet. Perse and Dunn (1998) suggest that U&G offers a theoretical explanation for changes in media use patterns when the audience adopts new communication technologies, such as the Internet, because the new media may displace similar needs satisfied with the use of traditional media.

The active audience concept is also gaining credibility with newer media technologies like the Internet. In other words, individuals can attempt to gratify television needs simply by switching on the TV set and clicking the remote control, while the two-way nature of online technologies, such as e-mail, bulletin boards, and chat rooms, requires audience members to be more active users. Web users actively search for information by clicking on links or using search engines, suggesting that web use is goal-directed and that users are aware of the needs they are attempting to satisfy when accessing the web (Lin & Jeffres, 1998). As emerging

new technologies provide users with a wider range of sources selection and channels of information to choose from, individuals select media content based on the most pressing personal needs. Accordingly, some communications scholars view the Internet as the ultimate channel for individualism, “a medium with the capability to empower the individual in terms of both the information he or she seeks and the information he or she creates” (Singer, 1998, p.10). As new technologies present people with more and more media choices, motivation and satisfaction become even more crucial components of audience analysis.

### **Motivations**

Audience activity is central to U&G research and communication motives are key components of audience activity (Rubin, 1993). People’s behaviors are determined by their needs to fulfill these motivations. The motivations for different media use are quite distinct from each other. Blumler and McQuail (1969) identified eight distinct motivations, developed through extensive open-ended survey questions, for the use or non-use of political media content. According to them, audience members use the media for *vote guidance*, to decide which candidate they should vote for; *reinforcement* of decisions already made; *surveillance* of present political circumstances, watching political content for *excitement*; and *anticipated utility*, because people want to develop future interpersonal communication. On

the other hand, the audience may stay away from political media content because they feel *alienated*; they need *relaxation* that cannot be provided by political content or because the political content is contrary to their *partisanship*.

Greenberg (1973) sorted out why British children watch television by several motivations. Eight clusters of motives were analyzed and derived from 180 open-ended survey questions. They found the following, uses for television watching. Audiences want to *pass time* when they have nothing to do; television provides a kind of diversion to *forget* present problems or to be alone. TV viewing helps children *learn about things* and *learn about themselves* from television, thus aiding their social interactions with other people. TV watching gets children's *excitement* about topics or issues. For older people, television serves as a means of *relaxation*, while for children, TV offers *companionship*. For some, TV viewing was simply a deeply ingrained *habit*.

Keller (1977) and Nobel (1987) sorted out two major motivations of telephone use, *intrinsic* or socialization purposes, which means people make phone calls for socialization such as chatting, keeping in contact with family members, or dating; and *instrumental* or task-orientated purposes, which means the telephone serves as a means for ordering products, information seeking, and making appointments. Claisse and Rowe (1987) constructed two

categories of *functional*, which means goal-directed behavior, and *relational*, which means to entertain affective relationship motivations for telephone use. A study by Williams, Dordick, and Jesuale (1985) extended the dimensions of U&G motivations by adding the *entertainment* motivation, which means people use the telephone for fun-seeking, a motivation especially relevant for young people. The motivation of *reassurance* refers to people fulfilling their psychological needs for support via telephone use, identified later by Dimmick, Sikand, and Patterson (1994). O'Keefe and Sulanowski (1995) illustrated the combined interpersonal and mass media motivations for telephone use: *sociability*, *entertainment*, *acquisition*, and *time management*. They also scrutinized the relationship between motivations and people's behavior. They found that gratifications sought, affect individual telephone use, and that the greater the motives for entertainment, time management, and social interaction, the more time the telephone user spend making or receiving calls.

Previous gratifications dimensions for conventional telephone use have been revised for cellular phone use. Leung and Wei (2000) identified a new motivation for pager use, *fashion and status*, which means having a cellular phone, can be viewed as a mark of social identity or as a status symbol. Their five categories of motivations for cellular phone use include:

*affection or sociability, mobility, relaxation, immediate access, instrumentality, reassurance, and fashion and status.*

Researchers have broadened the categories of traditional motivations, depending on the nature of new communication technologies, and by combining interpersonal and mediated motivations, when investigating this topic with respect to the Internet. Previous researchers, Williams and Rice (1983), already confirmed that a medium with interactive capabilities blurs the lines between interpersonal and mass-mediated communication. Furthermore, numbers of researchers stated that perceptions of the media's ability to gratify needs are influenced by the attributes of the media, especially characteristic content and their mode of transmission (Perse & Courtright, 1993; Perse & Dunn, 1998). Morris and Ogan (1996), for example, see the Internet as a mass medium with the ability to fulfill interpersonal and mediated needs. Rubin, Perse, and Barbato (1988) applied these ideas by including three more interpersonal needs to the list, proposed by Schutz in 1966; *inclusion, affection, and control*, and developed six main motivations for interpersonal communication: *pleasure, affection, inclusion, escape, relaxation, and control*. Papacharissi and Rubin (2000) used a combination of interpersonal motivations and new technology motivations to measure motives for using the Internet. They used the synthesis of interpersonal (*affection, inclusion,*



& control), media (*entertainment, habit, information, social interaction, escape, surveillance, pass time, & relaxation*), and the Internet (*time control, convenience, economy, & expressive need*) motivations. Because IM has multiple functions that, similar to different traditional media, such as television, phone, cellular, internet, and interpersonal communication; this study investigates the motivations for IM use by developing a matrix of 17 motivations based on these previous findings (**Table 1 & Table 2**).

**Table 1**  
**Motivations identified in prior U&G studies**

Media	Motivations	Definitions	Sources
	<i>Companionship</i>	Children watched television because to avoid being alone, and when no one else was around.	Greenberg, B. S. (1973). Gratifications of television viewing and their correlates for British children. In Blumler, J. G. & Katz, E., <i>The uses of mass communication: Current perspectives on gratifications research</i> , 71-92, Beverly Hills, CA: Sage.
	<i>Escape</i>	The use of television as a means of diversion from problems primarily in the home. Children thought television is useful as a means of getting away from the rest of the family and to get away from what they were doing.	Greenberg, B. S. (1973). Gratifications of television viewing and their correlates for British children. In Blumler, J. G. & Katz, E., <i>The uses of mass communication: Current perspectives on gratifications research</i> , 71-92, Beverly Hills, CA: Sage.
Television	<i>Excitement</i>	People who seek and fulfill sensation arousal and need for stimulation by utilizing a variety of mediated and nonmediated novel messages.	Greene, K., & Krcmar, M. (2005). Predicting exposure to and liking of media violence. <i>Communication Studies</i> , 56(1), 71-93.
	<i>Habit</i>	To find something analogous to a spectator's enjoyment of a competitive sport. (p. 65)	Blumler, J. G. & McQuail, D. <i>Television in politics</i> . Chicago: University of Chicago Press, 1969.
	<i>Habit</i>	A represent of a general, non-specific enjoyment of television watching.	Greenberg, B. S. (1973). Gratifications of television viewing and their correlates for British children. In Blumler, J. G. & Katz, E., <i>The uses of mass communication: Current perspectives on gratifications research</i> , 71-92, Beverly Hills, CA: Sage.

Table 1 Continued

Media	Motivations	Definitions	Sources
Television		Children watched television because it was a habit, because it was interesting, and because it was enjoyable.	Greenberg, B. S. (1973). Gratifications of television viewing and their correlates for British children. In Blumler, J. G. & Katz, E., <i>The uses of mass communication: Current perspectives on gratifications research</i> , 71-92, Beverly Hills, CA: Sage.
	<i>Pass time</i>	Children watched television to pass the time away, it gives them something to do, and to avoid boredom.	Greenberg, B. S. (1973). Gratifications of television viewing and their correlates for British children. In Blumler, J. G. & Katz, E., <i>The uses of mass communication: Current perspectives on gratifications research</i> , 71-92, Beverly Hills, CA: Sage.
	<i>Relaxation</i>	Television served as a means of relaxation and children watched television because they want to calm down and found it a pleasant rest.	Greenberg, B. S. (1973). Gratifications of television viewing and their correlates for British children. In Blumler, J. G. & Katz, E., <i>The uses of mass communication: Current perspectives on gratifications research</i> , 71-92, Beverly Hills, CA: Sage.
	<i>Surveillance</i>	To keep up with, learn, see what is going on in the country, in the world. (p. 65)	Blumler, J. G. & McQuail, D. <i>Television in politics</i> . Chicago: University of Chicago Press, 1969.
Phone	<i>Companionship</i>	Role of telephone in reassuring the user that friends and family, especially those at a distance, are all right and that help is available in case of emergencies. People fulfill their psychological needs for support or feeling secure via telephone use. (p. 657)	Dimmick, J., Sikand, J., & Patterson, S. (1994). The gratifications of the household telephone: Sociability, Instrumentality and reassurance. <i>Communication Research</i> , 21, 643-663
	<i>Entertainment</i>	People use the telephone for fun-seeking or entertaining themselves, people found telephone use is enjoyable.	Williams, F., Dordick, H., & Jesuale, H. (1985). Focus group and questionnaire development for exploring attitudes toward telephone service. In Williams F. (Ed.), <i>Social research and the telephone</i> . Los Angeles: Dordick and Associates.
	<i>Socialization</i>	The social contacts it facilitates between friends, relatives, neighbors, and clients. (p. 285)	Keller, S. (1977). The telephone in new, and old, communications. In Ithiel De Sola Pool (Ed). <i>The social impact of the telephone</i> , Cambridge, MA: MIT press, 281-298.
	<i>Utility</i>	Telephone use is described as a goal-directed behavior. Resort to inform for emergencies, safety and to purchase goods. Messenger to make appointment daily, and to transmit information. (p. 284)	Keller, S. (1977). The telephone in new, and old, communications. In Ithiel De Sola Pool (Ed). <i>The social impact of the telephone</i> , Cambridge, MA: MIT press, 281-298.

**Table 1 Continued**

Media	Motivations	Definitions	Sources
Cellular Phone	<i>Mobility</i>	Elimination of the need for coins and queuing up for public phones because of cellular phone use.	Leung, L. & Wei, R. (2000). More than just talk on the move: Uses and gratifications of the cellular phone. <i>Journalism &amp; Mass Communication Quarterly</i> , 77(2), 308-320.
Internet	<i>Convenience</i>	People use internet because of easy and cheap access to a computer	Papacharissi, Z. & Rubin, A. M. (2000). Predictors of Internet use. <i>Journal of Broadcasting &amp; Electronic Media</i> , 44(2), 175-197.
	<i>Identity</i>	The individual's needs to establish a "social location" in relation to others in society or to be anonymous to reveal their expression of honest opinion and to connect to others more intimately in society without being recognized.	Garramone, G. M., Harris, A. C., & Anderson R. (1986). Uses of political computer bulletin boards. <i>Journal of Broadcasting &amp; Electronic Media</i> , 30(3), 325-339.
	<i>Multitasking</i>	People use IM while engaging in some other computer-based activity.	Grinter, R. E., & Palen, L. (2002). IM everywhere: Instant messaging in teen life. In Proceedings of the 2002 ACM conference on computer supported cooperative work, New Orleans, LA.
	<i>Socialization</i>	Social purpose of media use, further interpersonal relationships with others.	Stafford, T. & Gonier, D. (2004). What Americans like about being online. <i>Communications of the ACM</i> , Nov2004, 47(11), 107-112.
	<i>Surveillance</i>	People's need to find information about some feature of the world around them.	Kaye, B. K. & Johnson, T. J. (2002). Online and in the know: Uses and gratifications of the Web for political information. <i>Journal of Broadcasting &amp; Electronic Media</i> , Mar2002, 46(1), 54-72.
Interpersonal Communication	<i>Utility</i>	People use BBS for specific tasks, or for one's work, or to test and learn computer hardware or software.	Garramone, G. M., Harris, A. C., & Anderson R. (1986). Uses of political computer bulletin Boards. <i>Journal of Broadcasting &amp; Electronic Media</i> , 30(3), 325-339.
	<i>Affection</i>	The need to love or be loved by others.	Schutz, W. C. (1966). <i>The interpersonal underworld</i> . Palo Alto, CA: Science and Behavior Book.
	<i>Control</i>	The need to exert power over other or to give power over one's self to other.	Schutz, W. C. (1966). <i>The interpersonal underworld</i> . Palo Alto, CA: Science and Behavior Book.
	<i>Inclusion</i>	The need to belong to or include others in a circle of acquaintance or friends.	Schutz, W. C. (1966). <i>The interpersonal underworld</i> . Palo Alto, CA: Science and Behavior Book.

**Table 2**  
**Motivations applied in this study**

1	<i>Affection</i>
2	<i>Companionship</i>
3	<i>Convenience</i>
4	<i>Control</i>
5	<i>Entertainment</i>
6	<i>Escape</i>
7	<i>Excitement</i>
8	<i>Habit</i>
9	<i>Identity</i>
10	<i>Inclusion</i>
11	<i>Mobility</i>
12	<i>Multitasking</i>
13	<i>Pass time</i>
14	<i>Relaxation</i>
15	<i>Socialization</i>
16	<i>Surveillance</i>
17	<i>Utility</i>

### **Gender and use of communication technology**

Gender differences were observed in the communications pattern from previous studies.

Arliss (1991), for example, suggested that women enjoy talking for their own sake while men prefer engaging in sports or other activities that essentially discourage lengthy verbal interactions. Gender differences in media gratifications and different patterns of media use were also found in previous studies.

Fischer (1992) found that there are gender differences in the use of the telephone for three reasons. First, women who work in the home may use the telephone for breaking the isolation that they experience during the day. Second, married women conduct most of the household organizing functions and social tasks such as making appointments and staying in touch with family and friends because these tasks are part of their gender role. Third, North American women are more comfortable on the telephone than are men because the social role of women requires more sociability.

Dimmick et al. (1994) also found that gender differences were observed in the gratifications from and in frequency of telephone use. Not only did females obtain higher levels of gratifications for sociability but they also made more telephone calls than males. Differences in gratifications and pattern of media use were linked with different demographic characteristics of users such as their media use behavior were also found in several previous studies (Leung & Wei, 2000; O'Keefe & Sulanowski, 1995; Rubin, Perse, & Barbato, 1988).

### **Instant Messaging**

Instant Messaging/Messenger (IM) systems support the Internet-based synchronous text chat, with point-to-point communication between users on the same system (Grinter & Palen, 2002). In other words, IM is a text-based tool that allows users to transmit electronic

messages via computer networks, using software that immediately displays the message in a window on the screen of the receiver.

Before IM, the first online messaging software was the private computer network, PLATO system, introduced in the early 1970s. PLATO combined lists of contacts with the ability to send messages. The UNIX system that followed, in which users can talk and write across the Internet, was mostly available to engineers and academics in the 1980s and 1990s. Multi User Dungeons (MUDs) and Internet Relay Chat (IRC) systems supported multi-way and real-time text chat for a decade. Later, multi-way and real-time software Zephyr, created by the Massachusetts Institute of Technology's (MIT) Project Athena in the late 1980s, was regarded as the first instant messaging tool that was adopted by a number of academic institutions (Ackerman & Palen, 1996). Zephyr communications were often topic-centered with a large but limited population of users. After that, Bulletin Board Systems became popular as the major online service, America Online, provided its users with the ability to talk in real-time with each other while they were online through the use of chat rooms and instant messages. Chat rooms allow a group of people to type in messages that are seen by everyone in the "room." Instant messages, on the other hand, are basically a chat room for just two people. In November 1996, as people spent more time on the Internet, the first free

IM software, ICQ, was created by the Israeli company Mirabilis. When ICQ was awarded two patents, a number of IM variations were developed simultaneously by many companies.

Generally speaking, IM networks consist of clients and servers. A user installs and registers as a client of a particular IM program that connects to a server operated by IM companies such as AOL, ICQ, MSN Messenger, or Yahoo Messenger. Thus, IM users know which other users are online and connect to them via the same IM program. It is important to note that different IM companies employ different protocols. Two different IM program services, therefore, are not “interoperable” or are not able to communicate by sending text messages. Recently, however, different IM companies have developed the *dual-protocols technology* to solve the problem of interoperability between programs. For instance, users of Yahoo Messenger now can communicate with users of MSN Messenger without installing or registering with another IM program.

There are four primary functions of Instant Messaging and Presence Services (IMPS): (1) users are able to announce their “mood” to authorized recipients, (2) users can send or receive electronic messages via a computer almost immediately, (3) users can create their own contact list and invite friends and family to chat in group discussions online, and (4) users can setup their own storage area where they can post pictures, music and other

multimedia content while sharing with other individuals and groups in an IM or chat session.

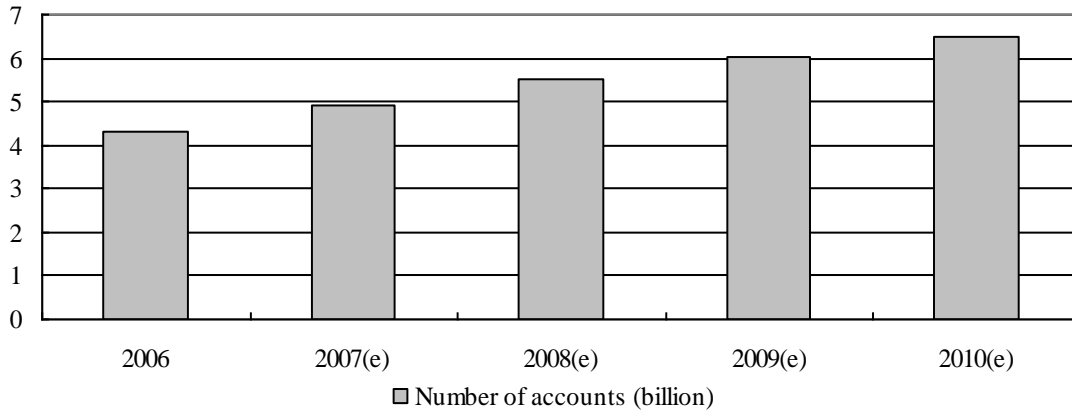
However, as IM evolves rapidly, its functions will not be confined to these four primary attributes. Interoperability, for instance, can also become an important characteristic of IM systems.

In addition, IM has integrated five other characteristics of traditional communication technologies into its new function. (1) Call out traditional telephone; not only can IM communicate with video and audio conferencing ability between users via the computer, but it can also connect with traditional telephones via Skype, one of the IM companies; (2) Variability of use; communication is enhanced by installing a specific program on the computer, through a cellular phone, PDA, and browsers. (3) Chat history; users can restore chat history with text, video, and audio, a function that may pave the way for more privacy problems in the future. (4) Blog; IM provides users with blogging ability, and (5) Web TV. Although this newest capability is still rarely seen, some IM providers such as QQ in China have successfully integrated Web TV into their software.

IM has spread rapidly since it first appeared. According to the iResearch 2005 China Instant Messaging Research Report, the global number of IM accounts is still on the rise. Based on current trends and statistics, IM may become the most common communication



mode on the web. The number of IM accounts around the world, stood at 4.32 billion in 2006 and is expected to be 6.5 billion in 2010 (**Figure 1**).



**Figure 1 Number of global IM accounts** (Source: iResearch Inc. 2007, [www.english.iresearch.com.cn](http://www.english.iresearch.com.cn))

Because IM offers communication in real time, it is multi-platform, low cost, and highly efficient, thus, it is gaining more web fans over the years. According to the Pew Internet and American Life Project (Shiu and Lenhart, 2004), more than 53 million online users subscribed to some IM software, a number that has been growing since 2000.

Among these 53 million, 13 million use IM on any given day, which constitutes a growth rate of about 9% since 2000. Although IM has been broadly used across different age groups, the main users are young Americans. Nearly two-thirds (62%) of IM users are 18-27 years old and 20% of this group send messages on a daily basis. Grinter and Palen (2002) agree that more and more teenagers are using IM, which suggests that it has already penetrated the

home and may indicate what can be expected from teenagers, as media consumers, when they become adults. Additionally, the results indicate that more people are replacing e-mails with IM. For instance, 24% of the 54 million IM users report using IM more frequently than e-mail. Another 6% use IM as much as e-mail.

The rapid spread of IM has also been detected in Taiwan. InsightXplorer Ltd. (2006), which monitors the online market in the country, notes that over half of all Taiwanese population (about 11.8 million) above 10 years old are online users. Further, the research indicated that the age groups between 10 and 19 (83.9%) and 20 to 29 (89.1 %), have the highest user rate among each population compared to other age groups.

This result revealed that the Internet is deeply popularized in the Taiwanese population. In other words, the Internet has become the second largest media next to television in Taiwan and would replace traditional media to become the major media for its nature of integrating different services from every dimensions. It is safe to say that the Internet would play an indispensable role and their influence would be enhanced by the time when the Taiwanese users depend on it more and more.

Among those Taiwanese online users, more than half of users employ IM services. The study also shows that a significant number of users are between 20-29 years old, which

constitutes the biggest proportion (39%) of IM users.

InsightXplorer Ltd. also reports in 2006 that the penetration rate of IM among users who are 15-19 years old, is up to 99%. This indicates that IM is now an indispensable tool in people's lives. The Institute for Information Industry (2005) reports that the most popular activities among household Internet users in 2005 were browsing for information (89%), e-mailing (78%), downloading and uploading files (54%) and sending instant messages (54%).

### **Research Questions**

The research questions tested for this project focused on specific characteristics of IM uses and the gratifications sought and obtained. Considering the foregoing literature review and the tenets of the uses and gratifications theory, this study asks:

Research Question 1: What are the gratifications Taiwanese students seek from Instant Messaging and what are the gratifications Taiwanese students obtain from Instant Messaging?

Research Question 2: What is the relationship of gratifications obtained from IM to the frequency of IM use?

Research Question 3: Are there differences between males and females in the

gratifications obtained from IM?

Research Question 4: Are there differences between males and females in their frequency of IM use?

## **CHAPTER 3**

### **METHODOLOGY**

This study aims to determine the gratifications Taiwanese students seek and obtain from Instant Messaging, and the relationship between gender and the frequency use of the IM communication technology. Before any data collection began, approval was granted by the committee of Institutional Review Board at Iowa State University, which reviews all research involving human participants for compliance with federal regulations. All information given by the participants was kept confidential.

#### **Survey design**

The survey methodology was utilized to identify the Taiwanese students' gratifications sought and obtained from IM use. According to the Department of Industrial Technology, Ministry of Economic Affairs, and commissioned FIND (2005), about 58% of Taiwan's population (About 13.2 million people) were general Internet users in 2005. Commissioned FIND also found that 76% of Taiwanese households owned computers. Furthermore, about 67% of households in Taiwan had Internet access and 88% of these online households used broadband. Based on these statistics and the characteristics of the IM data for this study, collected by conducting an online questionnaire to investigate Taiwanese students' gratifications from IM. Also, because this study assumed that the targeted subjects of

students who use IM must have ability to connect to the Internet; the respondents were recruited, via the letter of invitation contained on a website link, to invite respondents to complete the online questionnaire. This online questionnaire is composed of five primary sections: the consent form, preliminary questions, IM use pattern of the users, IM gratifications of the users, and demographic information of the respondents. The online questionnaire was designed using the default settings of a professional online questionnaire website, SurveyMonkey.com, which provided a link and allowed respondents to complete the questionnaire through their own computer at whatever time they were available. In the layout of the online questionnaire, the image of Iowa State University and the Greenlee School of Journalism and Communication were added as the logo at the top of the questionnaire to enhance the authenticity of the research and increase the response rate. In order to gather correct answers and eliminate misunderstandings of the online questionnaire from respondents, the English version questionnaire was translated into a traditional Chinese version through the back-translation method. After the first person translated the English language questionnaire into the Chinese version, a second person used that version to translate the questionnaire into a second English language version. The second Chinese version was translated by a third person. Then, three native Taiwanese translators, who have

more than ten years of experience in learning English, collectively compared, discussed and determined the final version of the Chinese questionnaire to avoid any discrepancies in understanding.

### **Pilot discussion**

After refining the questionnaire and following the back translation, a pilot discussion was conducted to examine the IM gratifications sought and obtained tables generated on the basis of prior U&G research. Twenty Taiwanese students were selected from a convenience sample and asked to serve as the pilot discussion group. The researcher distributed the questions and asked respondents to complete and provide suggestions for the Chinese version of the questionnaire developed from the back-translation method. After respondents finished the questionnaire in pilot discussion, each separately discussed with the researcher and provided suggestions for this questionnaire. Their evaluations of the questionnaire were used to minimize errors, improve wording, and refine the questionnaire design. The discussion was also used to discover redundant or inappropriate motivations sought and obtained from IM use. Also, similar statements were also eliminated based on those responses in pilot discussion. Following the pilot discussion, the researcher reduced the gratifications tables from 17 to 13 by eliminating the gratifications of affection and combining excitement, pass

time, and relaxation into entertainment (**Table 3**). Accordingly, the statements developed from those motivations, of the gratifications sought and obtained were reduced from 43 to 37 determined by the pilot discussion. The results of the pilot discussion helped to finalize the online questionnaire to investigate Taiwanese students' gratifications sought and obtained from IM use.

**Table 3**  
**Motivations determined by pilot discussion**

1	<i>Companionship</i>
2	<i>Control</i>
3	<i>Convenience</i>
4	<i>Entertainment</i>
5	<i>Escape</i>
6	<i>Habit</i>
7	<i>Identity</i>
8	<i>Inclusion</i>
9	<i>Mobility</i>
10	<i>Multitasking</i>
11	<i>Socialization</i>
12	<i>Surveillance</i>
13	<i>Utility</i>

### **Sampling**

Since the purpose of this study was to investigate Taiwanese students' use of IM and the gratifications from it, it was assumed that people who use IM would have the access to the Internet. Using an online questionnaire technique was beneficial because it eliminated the



limitation of geographic barriers and was less expensive than asking respondents to complete the survey questionnaire in person, or hiring a professional interviewer to gather data.

In order to attract Taiwanese undergraduate, graduate, and doctoral students to complete the online questionnaire, the invitation letter included the purpose of the research and a link to the online questionnaire, which was posted on the universities' Bulletin Board System (BBS). The reason for inviting respondents via posting invitation letter on BBS is that Taiwanese universities could not send out the invitation letter to all the students due to the confidentiality concerns. Furthermore, Taiwanese universities generally have their official BBS, operated by information technology department, which serves as a forum that allows students and school staff to post announcements and read messages posted by others. Every student in the university automatically receives an account and has access to the BBS. In other words, BBS is the official forum to exchange ideas and have interactive between the university and the students. Consequently, posting the invitation letter on the universities' BBS could reach most of the students for the target universities.

The major target universities were the national universities retrieved from the list of the universities of Ministry of Education. From 54 national universities listed, 32 universities have their own official registered BBS sites. 19 out of those 32 universities' BBS were

functionally operating. After contacting each university for permission of participation to the administrator of the BBS, 8 universities; National Chengchi University, National Dong Hwa University, National Tsing Hua University, National Taiwan Ocean University, National Yang-Ming University, National University of Kaohsiung, National Taiwan University of Arts, and National Taiwan Normal University; consented to allow researchers to forward the invitation letter to all the members of their BBS.

The invitation letters, with the online questionnaire link, were posed on those eight universities' BBS sites at 12:00 pm on Feb. 27, 2008 (Taiwan time zone +8), the start date of the online questionnaire. The online questionnaire was opened for respondents for a two week period from Feb. 27, 2008 through Mar. 12, 2008. The sample, unlike telephone and mail surveys, couldn't be produced for census list and random digit dialing because it is impossible to obtain complete lists of the BBS users. Also, the students may use more than one BBS user accounts, which make it impossible to guarantee the random sample. The online questionnaire technique, eventually, raised a unique set of concern when assuring a probability of random sample from the respondents.

However, the purpose of this study was to investigate the gratifications sought and obtained by respondents from using IM software that requires more experienced and active

users to complete the questionnaire instead of generating a random sample. Among the 516 students who took the online questionnaire, 406 respondents completed the whole questionnaire. The total completion rate had reached 79%. Respondents who decided not to participate, who were not IM users and who dropped in the middle of the questionnaire were excluded. The age of the Taiwanese students who participate this research ranged from 17 to 38 years old ( $m= 23.57$ ,  $sd= 3.704$ ).

### **Questionnaire**

A six page questionnaire was divided into five main sections as the measuring instrument to collect data for this study: (1) consent form, (2) preliminary question, (3) IM use and habits, (4) IM use and gratifications, and (5) demographic information. The logo of the sponsoring institution (Iowa State University) and department (Greenlee School of Journalism and Communication) was displayed on each page of the section.

#### (1) Consent form:

The first section of the questionnaire solicited respondents' consent and contained information about the goals of the study, why they were selected as members of the respondents, assurance of confidentiality, and instructions on how to complete the questionnaire. Respondents were asked to read through the consent forms provided

information and instruction about this questionnaire and to click the agree button if they made the decision to participate in this research study. If the respondents decide not to participate in the research and click the disagree button, the online questionnaire would automatically direct them to a “thank you page” for appreciating respondents’ participation.

(2) Preliminary question:

The second section of the questionnaire focused on exposure to IM and IM use habits, including what IM service provider respondents use, how long they have used IM, how often they use it, how many hours they spend on it, how they learned about this software, how many friends they have in their contact list, and the general categories of people (i.e., friends, family members, classmates) who are in their contact list. The answers of two main questions; how long have they been using the Internet and have they ever used IM; determined whether respondents could continue the later sections of questionnaire. IM is the communication software based on the technology of the computer and the Internet; it is impossible, therefore, that people could use IM without having used the Internet. If the respondents had never used IM the questionnaire directed those respondents to the demographic information section. The purpose of these two questions was to exclude the respondents who have never used the Internet and IM and enabled researchers to confirm the validity of answers from respondents.

### (3) IM use and habits

The third section of the questionnaire focused on exposure to IM and IM use habits. The respondents were asked the pattern of their IM use, such as, what IM service provider do respondents use; how long they have used IM; how often do they use it; how many hours do they spend on it; how did they learn about this software; how many friends do they have in their contact list; and the general categories of people (i.e., friends, family members, classmates) who are in their contact list. Additionally, questions about the dependency and frequency; how often do they use it and how many hours do they spend on it; were followed to investigate respondents' pattern use of the IM. Respondents were asked to choose or indicate the given options that most close to their reality life. Although more than half questions in this section were close-ended, it still provided open-ended options allowing researchers to specify precise answers that didn't appear on the check list. Furthermore, this section contained the Likert scale items intended to measure their agreement with the 37 statements (13 motivations) of gratifications sought of respondents for using IM.

### (4) IM use and gratifications

The same instrument was applied to explore the gratifications obtained of respondents from using IM. In this section, the question asked respondents with different manner to

confirm their need actually be gratified. This section also contained the Likert scale items intended to measure their agreement with the 37 statements (13 motivations) of gratifications obtained of respondents for using IM.

#### (5) Demographic information

The fifth section of the questionnaire requested respondents to provide their demographic and other background information at the end of the survey questionnaire. Seven questions in this section were close-ended, except the respondents' age and major. Because the subjects of this research were undergraduate, graduate, and doctoral students, the question of education level only provided three possible options, undergraduate, graduate, and doctoral for respondents excluded elementary, middle, and high school options.

To increase the respondents' attention and response rate, this questionnaire employed earth color as a background and left adequate response space for the different categories without confusing the arrangement. According to the design of the online questionnaire by Wimmer and Dominick (1994), the Iowa State University and Greenlee School of Journalism and Communication logo was applied as the title of the questionnaire to increase the response rate with university sponsorship.

The gratifications employed a combination of motivations people might have for using

interpersonal communication; the traditional mass media, such as television, the Internet, and telephone (traditional and cellular) as identified in previous studies (**Table 2**). The respondents were asked to choose the extent to which they agree with each of these 13 motivations with a total 37 statements for using IM on a five-point Likert scale, where 5 is “strongly agree” and 1 means “strongly disagree.” This study generated 17 potential motivations from literature, in this area, for television use (*companionship, entertainment, escape, excitement, habit, pass time, relaxation, surveillance*), traditional phone use (*companionship, entertainment, socialization, utility*), cellular phone use (*mobility*), the Internet communication (*convenience, identity, multitasking, socialization, surveillance, utility*), and interpersonal communication (*affection, control, inclusion*). The gratifications sought (motivations) and gratifications obtained were incorporated in the online questionnaire. The final version of 13 gratifications (*Control, Companionship, Convenience, Entertainment, Escape, Habit, Identity, Inclusion, Mobility, Multitasking, Socialization, Surveillance, and Utility*), with a total of 37 statements for each gratifications sought and obtained, was developed from the organization of reviewing the previous research to results of pilot discussion of the tentative questionnaire. For each gratification sought and obtained, tables contained two or three statements. For the former part of gratifications sought, the

respondents were asked to complete a sentence beginning with the phrase, “*I use Instant Messaging ...*” and respondents were asked to rate the scale of agreement for each combined statements:

(1) Control:

- to choose when to talk and when stop to talk with people.
- to select people that I want and block I don't want to talk.
- to feel more secure to talk with someone not familiar.

(2) Companionship:

- to maintain relationship with family members or friends.
- to feel less lonely and be loved.
- to feel closer to my family members or friends.

(3) Convenience:

- because it is easy to access.
- because it is faster to talk to people than email.
- because it is free.

(4) Entertainment:

- to relax.
- to use the inactive functions or games such as winks and emoticons for fun.
- to avoid feel bored when I have nothing to do.

(5) Escape:

- to get away from pressure and responsibilities temporary.
- to help me deal with daily trouble.
- to get away from what I am doing or should be doing.

(6) Habit:

- because it's my habit to use it.
- because I feel anxious if I don' use it.



- because I want to use it when I am online.

(7) Identity:

- to be someone else.
- to share some secrets online which I can't tell people face to face.
- to let people know about me through uploading my personal articles, pictures, and video.

(8) Inclusion:

- because I have to use it in a group or a company.
- because my friends or family members use it.

(9) Mobility:

- because I can use IM on any computer.
- because I can send any digital files without storing device.
- because I can use IM in any situation.

(10) Multitasking:

- because I can communicate with people while doing other things such as work or assignment.
- because I can talk with many people at the same time.

(11) Socialization:

- to know new people without worry or pressure.
- to have a blind date.
- because it provides me an alternative way to talk with people.

(12) Surveillance:

- to get updates news about my family members or friends.
- to know who is on-line now.
- because I can become invisible.

(13) Utility:

- to help with my research, assignments, work or study.
- to practice my computer or typing skills.

- to conduct a video conference or send digital files with people.

For the latter part of gratifications obtained, the respondents were asked to complete the sentence beginning with the phrase, “*Instant Messaging indeed effectively allows (makes) me ...*” and respondents were asked to rate the scale of agreement for each combined statements:

(1) Control:

- to choose when to talk and when stop to talk with people.
- to select people that I want and block I don't want to talk.
- to feel more secure to talk with someone not familiar.

(2) Companionship:

- to maintain relationship with family members or friends.
- to feel less lonely and be loved.
- to feel closer to my family members or friends.

(3) Convenience:

- access easily.
- to communicate with people faster than email.
- to use it free.

(4) Entertainment:

- to relax.
- to use the inactive functions or games such as winks and emoticons for fun.
- to avoid feel boring when I have nothing to do.

(5) Escape:

- to get away from pressure and responsibilities temporary.
- to deal with daily trouble.
- to get away from what I am doing or should be doing.

(6) Habit:

- to use it as habit.
- to feel anxious if I don't use it.
- to use it when I am online.

(7) Identity:

- to be someone else.
- to share some secrets online which I can't tell people face to face.
- to let people know about me through uploading my personal articles, pictures, and video.

(8) Inclusion:

- have to use it in a group or a company.
- to use it when my friends or family members use it.

(9) Mobility:

- to use it on any computer.
- to send any digital files without storing device.
- to use it in any situation.

(10) Multitasking:

- to communicate with people while doing other things such as work or assignment.
- to talk with many people at the same time.

(11) Socialization:

- to know new people without worry or pressure.
- to have a blind date.
- to have an alternative way to talk with people.

(12) Surveillance:

- to get updates news about my family members or friends.
- to know who is on-line now.
- to become invisible.

(13) Utility:

- to complete my research, assignments, work or study.
- to practice my computer or typing skills.
- to conduct a video conference or send digital files with people.

### **Data analysis**

This study examined four research questions by applying three different methods to analyze the data collected from the online questionnaire. For Research Question one, in order to know what gratifications were sought and obtained of Taiwanese students from Instant Messaging, examining the descriptive statistics was employed to know the percentage of students' agreement with the statements. Based on previous studies, Principal Component Factor Analysis was also applied to confirm that the 37 statements correctly belonged to the 13 gratifications generated from previous studies. After factor analysis, those new factors (new gratifications sought and obtained) were used to answer for the other research question.

Many previous studies implied that media behavior is positively related to gratifications obtained (Blumler & Katz, 1974; Dimmick, Sikand, & Patterson, 1994; Plamgreen, Wenner, & Rosengren, 1985). For the second research question, the Pearson correlations technique was utilized to examine the relationship between gratifications obtained from IM and the frequency of IM use from Taiwanese students. New factors generated from the factor analysis were retained to test the relationship with the frequency of IM use.

Dimmick et al. (1994) and Fischer (1992) also suggested that gender difference may cause different media use pattern. Accordingly, the independent-sample *t* test technique was used for both in the third and fourth research questions to identify the difference in gratifications between males and females in the gratifications obtained from IM, and between males and females in their frequency of IM use.

## CHAPTER 4

### RESULTS

The results presented in this chapter describe why Taiwanese students use IM. It starts with the descriptive statistics for all variables in the online questionnaire, followed by the results for each research question.

#### **Descriptive statistics**

A total number of 516 respondents agreed to participate for the online questionnaire. Among those students who took the online questionnaire, 406 respondents completed the entire questionnaire. The completion rate was 79%, while respondents who decided not to participate, who were not IM users, and who dropped in the middle of the questionnaire, were excluded. Accordingly, these 406 respondents were the major subject for analyzing the gratifications sought and obtained of IM in this study (**Table 4**).

**Table 4**  
**Number of respondents dropped or filtered**

	Participants	Drop		Filter		Total
Sec. 1: Consent form	516	10	2%	0	0%	506
Sec. 2: Preliminary Question	506	8	16%	3	.6%	495
Sec. 3: IM use & habit	495	47	10%	0	0%	448
Sect. 4: IM use & gratifications	448	40	9%	0	0%	408
Section 5: Demographic info.	408	2	.5%	0	0%	N=406

## Respondent demographics

For those participants (N=406) who completed this online questionnaire, the demographic information was collected in the fifth section (**Table 5**). A larger number of female students (58.1%) than male students (41.6%) participated this research. The age of the respondents ranged from 17 to 38 years old with the dominant age of 23 ( $m=23.57$ ,  $sd=3.7$ ). The primary age group of participants is 21-25 years old while an age group of less than 20 (22.4%) and 26-30 (21.5%) were the secondary groups. The students' current education also corresponded to the distribution of the age group.

**Table 5**  
**Profile of respondents**

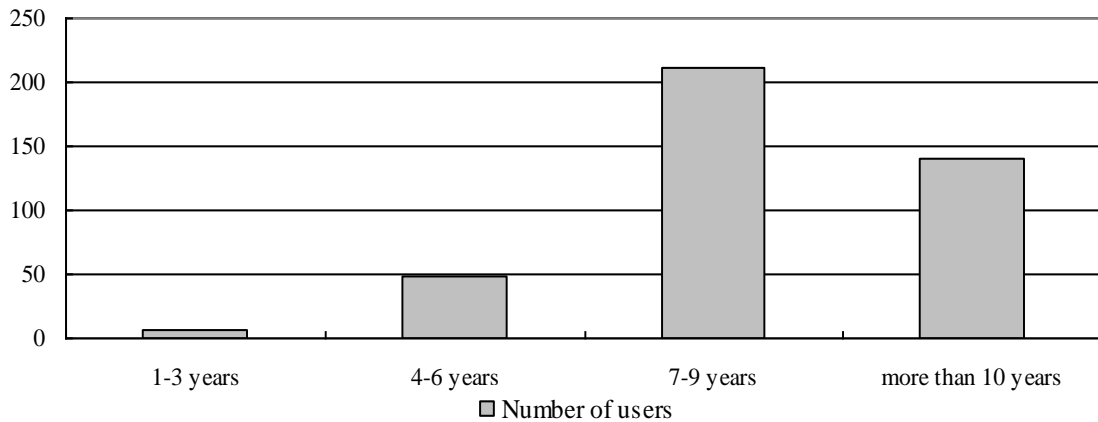
Gender	Male	41.6%
	Female	58.4%
Age	Less than 20	22.4%
	21-25	51.5%
	26-30	21.5%
	More than 31	4.5%
Education	Undergraduate	53.9%
	Graduate	35.5%
	Doctoral	10.6%
Grade	First year	26.1%
	Second year	27.1%
	Third year	25.9%
	Forth year	14.8%
	Fifth year	2.7%
	Sixth year or more	3.4%

Undergraduate students (53.9%), correspondent to reality education status in Taiwan, were the dominant group contributing to the online questionnaire, followed by graduate students (35.5%) and doctoral students (10.6%). Because the subject of this study is to explore the gratifications sought and obtained by Taiwanese students with college or higher education background, this study assumed that the participants would not exceed these three categories. In addition, most respondents also indicated that they were in their first to third year of their current study (79.1%).

### **Internet and IM use**

In the first section, over 98% of respondents (506) decided to contribute their answer for this research voluntarily while 10 respondents, who decided not to participate, were excluded in this study. More than half of the respondents (52%), in the second section of preliminary questions, have used the Internet (including e-mail, access to website) for 7 to 9 years (**Figure 2**). The respondents who have more than 10 years experience on the Internet have the second highest number (34.7%) for Internet use. In other words, the majority (87.7%) of the respondents have spent over 7 years using the Internet. No respondents reported that they used the Internet less than 1 year. This result indicates that Taiwanese students have adequate background knowledge of experiencing the Internet.





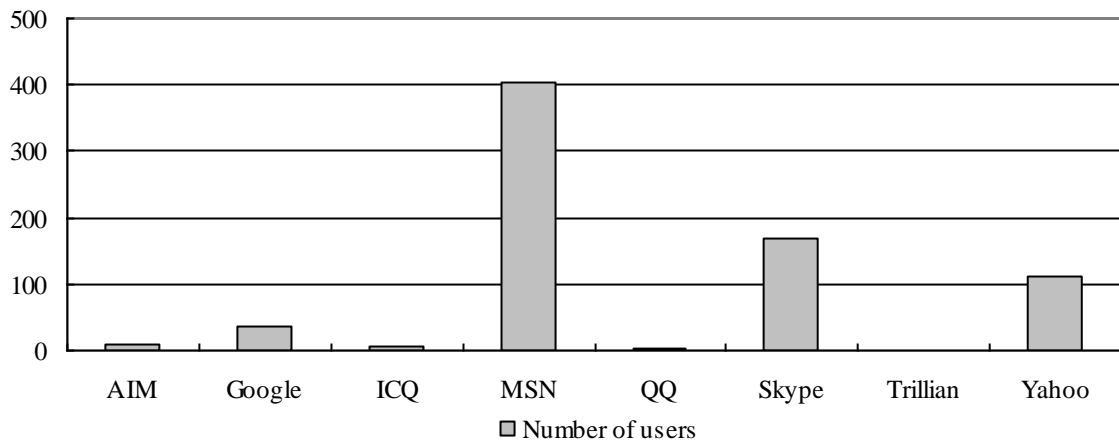
**Figure 2 Length of Internet Use**

Consistent with the previous results, almost every respondent (99.3%) has experience using IM software. Those 3 respondents who never used IM were filtered out from the analysis. This high penetration of IM use reflects that previous statistics of IM have been extensively used by the young generation (18-30) in Taiwan also justifies the importance of studies for this new communication technology in the future.

In the third section of IM use and habit, respondents were asked about their use pattern and their gratifications sought (motivations) for IM. The participants who were not users of IM were excluded from this section. When asked what types of IM respondents currently use, the result showed an identical outcome that MSN has the highest penetration rate for nearly every college student (99.5%), followed by Skype (41.4%) and Yahoo (27.6%) (**Figure 3**).

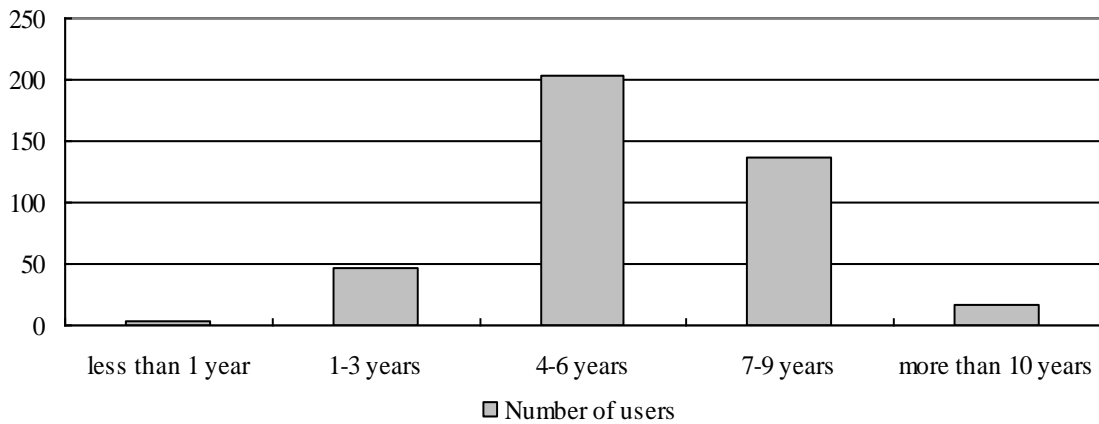
This data also echoes the fact that these three IM companies were the current leading brands not only in Taiwan but in the world. Only 8.9% and 2% of students use Google and

AIM because Google’s IM was developed just two years ago, and AIM is more concentrated on the U.S. market compared to other countries. Most of Taiwanese students (60%) used more than one IM services for their daily communication. This result corresponded to the fact that IM use has grown rapidly among not only teenagers, but also college generations.



**Figure 3 Number of users of IM provider**

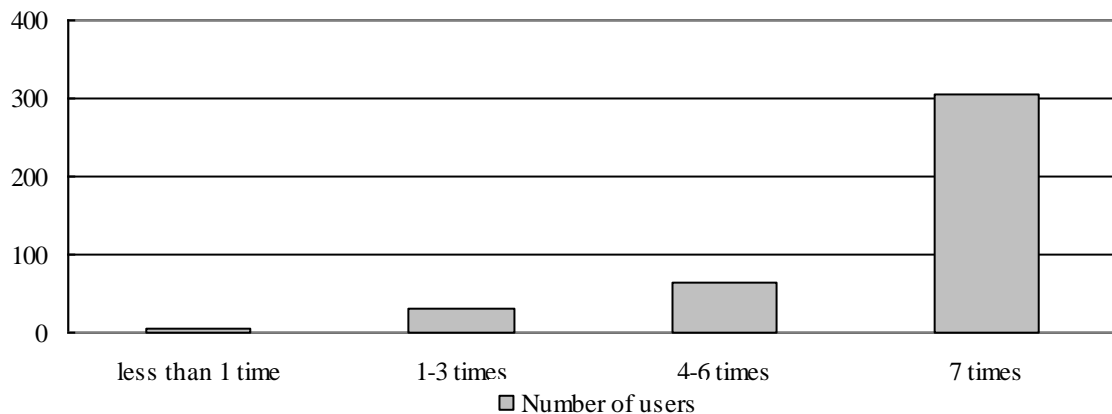
Over half of the participants (50.2%) have used IM service for 4 to 6 years and 33.5% for 7 to 9 years (Figure 4).



**Figure 4 Length of IM use**

That is to say, high proportions (88%) of the respondents have immersed this new communication technology for more than 4 years. Similarity, more IM use pattern statistics indicated that Taiwanese students are relatively heavy users based on how often they use IM and how many hours they spend on IM.

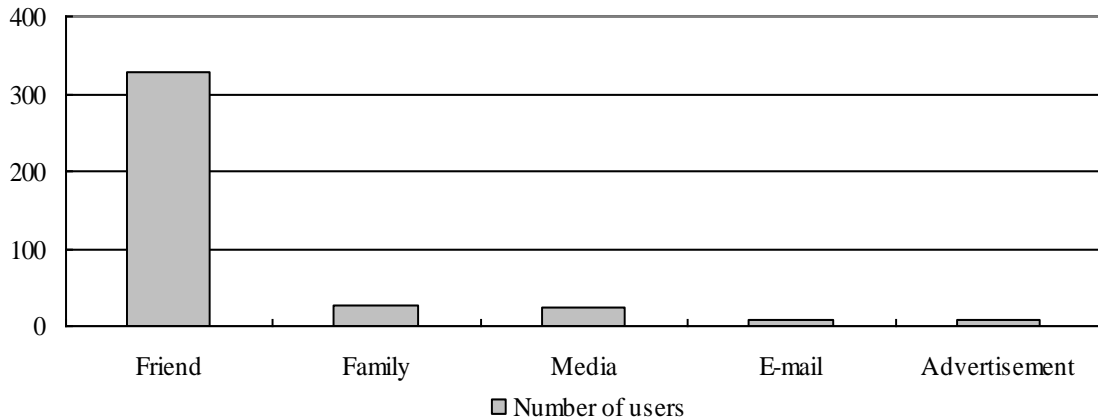
Two-thirds (75.4%) of the students revealed that they used IM every day in an average week (**Figure 5**). Only 8.8% of students utilized it less than three days per week. Moreover, the majority of the respondents (55.8%) reported that they spent one to 3 hours on IM in an average day.



**Figure 5 Frequency of IM use per week**

Another number of IM users (19.5%) used it for 4 to 6 hours per day while there were still many students (24.4%) who spent more than 8 hours per day on it. By Estimate, on average, Taiwanese students used IM service 7 to 21 hours a week. This prominent result implies that IM plays an important communication role among the future work force of

Taiwan. This significant finding also appeared when the questionnaire asked how the correspondents first heard about IM (**Figure 6**). Most of Taiwanese students first learned about IM through their friends and classmates (82.6%).



**Figure 6 First learn about IM**

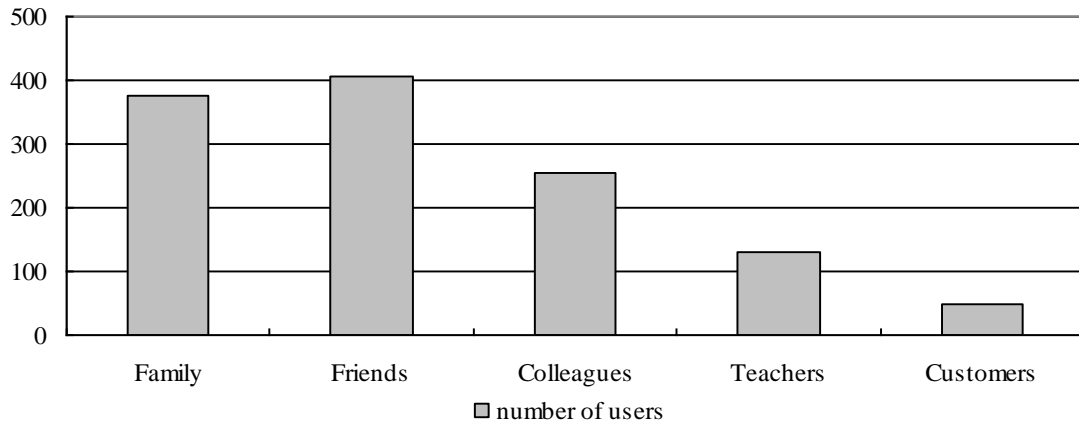
This result matches the innate characteristics of IM connecting people's social network.

The following question asked students to provide the number of people in their IM contact list. It showed a scattered distribution range from 1 to 794 contacts. Approximately 35% of Taiwanese students have 51 to 100 contactors and 88% of students have no more than 200 contacts in their IM contact list.

Among the different sources in the Taiwanese students' contact list, family members (92.4%) and friends/classmates (99.8%) were the most important and prominent categories in students' list (**Figure 7**).

However, colleagues (63.2%) and teachers (32.4%) were still indispensable elements for

students. Also, some respondents specified that other contacts, like web-friends and students, were also included. Combining the findings above, we can conclude that IM already plays an important role in connecting Taiwanese students' social network and in their daily life.



**Figure 7 Categories of IM contact list**

### **Frequency of gratifications sought**

The main focus of this questionnaire was to learn about Taiwanese the gratifications students' sought (e.g. motivations) from IM. Respondents were asked to provide the level of agreement to 37 gratifications sought statements derived from previous studies. The frequency table presented below shows that most of the respondents agreed or strongly agreed with those statements (**Table 6**).

**Table 6**  
**Frequency of gratifications sought**

<i>“I use Instant Messaging...”</i>	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
to choose when to talk and when stop to talk with people.	1.7%	11.3%	19.5%	<b>50.2%</b>	17.2%
to select people that I want and block I don't want to talk.	3.2%	13.1%	22.2%	<b>42.1%</b>	19.5%
to feel more secure to talk with someone not familiar.	7.6%	24.1%	25.9%	<b>34.2%</b>	8.1%
to maintain relationship with family members or friends.	2.5%	6.2%	10.8%	<b>50.5%</b>	30.0%
to feel less lonely and be loved.	8.4%	24.1%	<b>36.0%</b>	25.6%	5.9%
to feel closer to my family members or friends.	3.4%	8.1%	20.0%	<b>48.0%</b>	20.4%
because it is easy to access.	0.7%	0.5%	3.9%	<b>50.5%</b>	44.3%
because it is faster to talk to people than email.	0.5%	0.2%	2.5%	30.3%	<b>66.5%</b>
because it is free.	0.5%	0.2%	5.4%	35.7%	<b>58.1%</b>
to relax.	3.2%	13.1%	34.7%	<b>37.9%</b>	11.1%
to use the inactive functions or games	7.1%	17.2%	<b>35.5%</b>	28.8%	11.3%
to avoid feel bored when I have nothing to do.	7.9%	16.3%	25.4%	<b>39.9%</b>	10.6%
to get away from pressure and responsibilities temporary.	15.5%	<b>32.0%</b>	26.4%	21.9%	4.2%
to help me deal with daily trouble.	6.2%	17.7%	29.3%	<b>39.9%</b>	6.9%
to get away from what I am doing or should be doing.	11.6%	<b>37.7%</b>	26.8%	20.4%	3.4%
because it's my habit to use it.	1.5%	4.9%	16.0%	<b>51.2%</b>	26.4%
because I feel anxious if I don' use it.	18.7%	<b>33.3%</b>	23.2%	19.5%	5.4%
because I want to use it when I am online.	7.1%	25.9%	12.8%	<b>37.9%</b>	16.3%
to be someone else.	<b>44.8%</b>	36.0%	12.1%	5.4%	1.7%
to share some secrets online not face to face.	24.1%	<b>33.0%</b>	19.2%	19.5%	4.2%
because it's my habit to use it.	1.5%	4.9%	16.0%	<b>51.2%</b>	26.4%
because I feel anxious if I don' use it.	18.7%	<b>33.3%</b>	23.2%	19.5%	5.4%
because I want to use it when I am online.	7.1%	25.9%	12.8%	<b>37.9%</b>	16.3%
to be someone else.	<b>44.8%</b>	36.0%	12.1%	5.4%	1.7%
to share some secrets online not face to face.	24.1%	<b>33.0%</b>	19.2%	19.5%	4.2%
to let people know about me through uploading my space	15.5%	30.5%	<b>31.5%</b>	19.0%	3.4%
because I have to use it in a group or a company.	17.7%	<b>27.3%</b>	26.4%	23.2%	5.4%
because my friends or family members use it.	1.5%	3.2%	11.1%	<b>58.6%</b>	25.6%
because I can use IM on any computer.	1.5%	5.7%	19.5%	<b>51.7%</b>	21.7%
because I can send any digital files without storing device.	2.0%	4.2%	22.7%	<b>48.8%</b>	22.4%

**Table 6 Continued**

<i>"I use Instant Messaging..."</i>	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
because I can use IM in any situation.	2.0%	6.9%	23.2%	<b>51.7%</b>	16.3%
because I can communicate with people and doing other things.	1.0%	4.4%	12.3%	<b>55.7%</b>	26.6%
because I can talk with many people at the same time.	0.2%	3.4%	13.5%	<b>57.9%</b>	24.9%
to know new people without worry or pressure.	5.4%	19.2%	<b>33.0%</b>	<b>33.0%</b>	9.4%
to have a blind date.	14.5%	<b>31.0%</b>	30.3%	20.9%	3.2%
because it provides me an alternative way to talk with people.	0.5%	2.0%	5.4%	<b>62.6%</b>	29.6%
to get updates news about my family members or friends.	1.0%	3.2%	15.3%	<b>53.7%</b>	26.8%
to know who is on-line now.	1.7%	10.1%	23.9%	<b>48.0%</b>	16.3%
because I can become invisible.	5.2%	9.4%	25.4%	<b>40.6%</b>	19.5%
to help with my research, assignments, work or study.	3.0%	7.9%	22.2%	<b>49.3%</b>	17.7%
to practice my computer or typing skills.	9.1%	19.2%	<b>38.4%</b>	26.6%	6.7%
to conduct a video conference or send digital files with people.	3.7%	7.1%	21.9%	<b>47.5%</b>	19.7%

### Frequency of gratifications obtained

Results for gratifications obtained in the forth section also seem consistent with the gratifications that respondents sought (**Table 7**). This pattern results from a simple fact that the respondents' motivations have been satisfied through the use of IM. In some situations, students who didn't expect to obtain the needs from IM would rate a higher agreement after they actually obtained certain needs from IM. Some expectations, on the other hand, of respondents rated higher than they actually obtained from IM.

**Table 7**  
**Frequency of gratifications obtained**

<i>“Instant Messaging indeed effectively allows me ...”</i>	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
to choose when to talk and when stop to talk with people.	2.0%	8.6%	14.3%	<b>57.9%</b>	17.2%
to select people that I want and block I don't want to talk.	1.5%	4.7%	16.5%	<b>55.4%</b>	21.9%
to feel more secure to talk with someone not familiar.	4.4%	16.0%	29.3%	<b>41.6%</b>	8.6%
to maintain relationship with family members or friends.	1.7%	4.4%	16.0%	<b>54.2%</b>	23.6%
to feel less lonely and be loved.	6.9%	21.7%	<b>41.9%</b>	23.6%	5.9%
to feel closer to my family members or friends.	1.7%	5.9%	18.0%	<b>54.9%</b>	19.5%
access easily.	0.5%	0%	6.4%	<b>51.5%</b>	41.6%
to communicate with people faster than email.	0.7%	0.2%	3.4%	39.9%	<b>55.7%</b>
to use it free.	0.5%	1.0%	4.7%	41.1%	<b>52.7%</b>
to relax.	2.0%	8.9%	<b>38.2%</b>	35.7%	15.3%
to use the inactive functions or games.	3.9%	14.3%	34.2%	<b>35.0%</b>	12.6%
to avoid feel boring when I have nothing to do.	4.4%	19.0%	25.1%	<b>41.6%</b>	9.9%
to get away from pressure and responsibilities temporary.	11.8%	<b>31.0%</b>	30.0%	21.7%	5.4%
to deal with daily trouble.	6.9%	15.3%	33.3%	<b>36.5%</b>	8.1%
to get away from what I am doing or should be doing.	12.8%	<b>30.8%</b>	28.8%	21.9%	5.7%
to use it as habit.	2.5%	4.4%	17.0%	<b>52.2%</b>	23.9%
to feel anxious if I don' use it.	15.5%	<b>33.7%</b>	27.1%	17.7%	5.9%
to use it when I am online.	7.6%	20.0%	14.8%	<b>39.2%</b>	18.5%
to be someone else.	34.5%	<b>34.7%</b>	18.2%	9.9%	2.7%
to share some secrets online which I can't tell people in person.	16.3%	<b>30.5%</b>	23.6%	23.6%	5.9%
to let people know about me through uploading my space.	12.3%	24.6%	<b>31.3%</b>	27.1%	4.7%
have to use it in a group or a company	12.3%	25.4%	25.4%	<b>28.3%</b>	8.6%
to use it when my friends or family members use it.	2.5%	8.9%	19.0%	<b>50.0%</b>	19.7%
to use it on any computer.	1.0%	6.4%	19.5%	<b>47.0%</b>	26.1%
to send any digital files without storing device.	1.5%	3.9%	15.8%	<b>52.5%</b>	26.4%
to use it in any situation.	1.2%	10.1%	19.5%	<b>49.0%</b>	20.2%
to communicate with people while doing other things.	2.2%	3.7%	10.8%	<b>53.9%</b>	29.3%
to talk with many people at the same time.	1.0%	2.5%	10.8%	<b>54.7%</b>	31.0%
to know new people without worry or pressure.	5.2%	15.0%	31.8%	<b>37.9%</b>	10.1%
to have a blind date.	11.6%	23.9%	<b>32.5%</b>	26.1%	5.9%



**Table 7 Continued**

<i>“Instant Messaging indeed effectively allows me ...”</i>	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
to have an alternative way to talk with people.	0.7%	1.5%	7.9%	<b>61.1%</b>	28.8%
to get updates news about my family members or friends.	1.0%	3.4%	11.6%	<b>54.9%</b>	29.1%
to know who is on-line now.	1.0%	4.4%	17.2%	<b>52.7%</b>	24.6%
to become invisible.	3.9%	6.4%	22.2%	<b>44.3%</b>	23.2%
to complete my research, assignments, work or study.	4.2%	8.1%	23.6%	<b>47.5%</b>	16.5%
to practice my computer or typing skills.	6.9%	14.3%	<b>35.7%</b>	33.7%	9.4%
to conduct a video conference or send digital files with people.	2.5%	3.9%	17.7%	<b>51.0%</b>	24.9%

After respondents rated the level of agreement about their expectations or gratifications from IM use, the successive question asked them to evaluate, overall, how satisfied they were with IM use, in order to reconfirm their satisfaction in the gratifications obtained section. The results revealed that the majority of the respondents (62%) agreed IM somewhat satisfied and over 30% of respondents found using IM extremely satisfied their needs. Namely, answering the previous question, most of Taiwanese students (95.4%) indeed obtained some gratifications from IM use, combining the respondents of agree and strongly agree categories.

### **Gratifications sought and obtained from IM use**

After respondents indicated their level of agreement with the 37 statements of gratifications sought and obtained for using IM, those original statements were subjected to principal component analysis with Varimax rotation technique in SPSS.

The criteria for each factor to be retained was an eigenvalue greater than 1.0, as

suggested by previous studies (Dimmick, Sikand, & Patterson, 1994; Leung & Wei, 2000; Lin, 1999; O’Keefe & Sulanowski, 1995; Papacharissi & Rubin, 2000; Rubin, Perse, & Barbato, 1998) and the statements were considered to scale on a particular factor if the primary loadings were greater than 0.5. At least two statements were necessary to form a factor. Reliability coefficient analysis was utilized to examine the inter-item reliability.

Among those statements, the principal components analysis identified 10 factors for gratifications sought (**Table 8**), while 9 factors emerged from gratifications obtained from using IM (**Table 9**). Each table shows factor structure, eigenvalues, variance explained, and reliability coefficient values.

**Table 8**  
**Rotated factor loadings of gratifications sought for IM use**

Gratifications sought items “I use Instant Messaging....”	Factors									
	1	2	3	4	5	6	7	8	9	10
Factor 1: <i>Flexibility</i> ( $m=3.90$ ; $sd=.63$ )										
to use it in any situation.	<b>.76</b>	.07	.03	.06	.10	-.04	.14	-.03	.15	.03
to send any digital files without storing device.	<b>.73</b>	.06	.06	.04	.06	.07	-.05	.06	.31	.04
to communicate with people while doing other things.	<b>.69</b>	.11	.14	.09	.11	.11	.12	-.03	-.10	.02
to use it on any computer.	<b>.66</b>	.04	.19	.05	.08	.17	.12	.13	.13	.06
to talk with many people at the same time	<b>.61</b>	.11	.25	.01	.20	.15	.10	-.00	-.03	.20
Factor 2: <i>Escape</i> ( $m=3.05$ ; $sd=.78$ )										
to get away pressure and responsibilities temporary.	.04	<b>.82</b>	-.10	.12	.10	.07	.09	.09	-.13	.11
to get away from what I am doing or should be doing.	.14	<b>.75</b>	-.15	.08	.13	.10	.13	.11	-.10	.15
to avoid feel bored when I have nothing to do.	.08	<b>.64</b>	.20	-.02	.22	.05	.22	.04	.17	-.06
to relax.	.06	<b>.63</b>	.24	.10	.03	.15	.16	-.10	.24	-.07
to deal with daily trouble.	.03	<b>.60</b>	.15	.28	.13	-.04	-.06	.23	.16	.08

**Table 8 Continued**

Gratifications sought items “I use Instant Messaging....”	Factors									
	1	2	3	4	5	6	7	8	9	10
Factor 3: <i>Convenience</i> ( $m=4.50$ ; $sd=.54$ )										
to communicate with people faster than email.	.15	.01	<b>.81</b>	.06	.03	.07	.11	-.06	.02	-.04
access easily.	.19	.07	<b>.72</b>	.13	-.07	.21	.016	-.01	.08	.02
to use it free.	.12	.07	<b>.71</b>	.15	-.01	.11	.11	-.09	.07	.08
Factor 4: <i>Companionship</i> ( $m=3.68$ ; $sd=.71$ )										
to maintain relationship with family or friends.	.07	.08	.17	<b>.82</b>	-.01	.08	.04	.06	.04	.05
to feel closer to my family members or friends.	.03	.20	.16	<b>.78</b>	.08	.14	.085	-.04	.11	-.06
to get updates news about my family members or friends.	.32	.05	.19	<b>.63</b>	.00	-.18	.02	-.04	.11	.26
to feel less lonely and be loved.	-.06	.26	-.11	<b>.53</b>	.20	.35	.25	.03	.12	.06
Factor 5: <i>Socialization</i> ( $m=3.00$ ; $sd=.85$ )										
to know new people without worry or pressure.	.18	.16	.09	.06	<b>.75</b>	.08	.09	.08	.14	.09
to have a blind date.	.10	.20	-.10	-.00	<b>.67</b>	.02	.10	.22	.09	.08
to feel more secure to talk with someone not familiar.	.12	.10	.03	.09	<b>.63</b>	.40	.14	.01	-.07	.05
Factor 6: <i>Control</i> ( $m=3.66$ ; $sd=.88$ )										
to select and block people that I want.	.12	.15	.11	.05	.14	<b>.79</b>	.06	.08	-.06	.18
to choose when to talk and when stop to talk.	.16	.10	.22	.10	.097	<b>.70</b>	-.01	.06	.07	.075
Factor 7: <i>Habit</i> ( $m=3.29$ ; $sd=.85$ )										
to use it when I am online.	.17	.04	.17	.09	.17	.04	<b>.75</b>	.05	.01	-.01
to feel anxious if I don’ use it.	.09	.30	-.13	.07	.08	.01	<b>.72</b>	.157	.04	.17
to use it as habit.	.20	.18	.38	.07	.06	.06	<b>.57</b>	.13	.10	.06
Factor 8: <i>Identity</i> ( $m=2.41$ ; $sd=.77$ )										
have to use it in a group or a company.	-.08	.02	.02	-.05	-.00	-.04	-.01	<b>.74</b>	.03	.23
to share some secrets online which I can’t tell people.	.09	.17	-.04	.01	.46	.10	.11	<b>.57</b>	.03	-.05
to let people know about me through my blog.	.20	.16	-.06	.16	.16	.20	.22	<b>.55</b>	.22	-.15
to be someone else.	.08	.17	-.34	-.04	.28	.135	.18	<b>.55</b>	-.04	-.11
Factor 9: <i>Utility</i> ( $m=3.37$ ; $sd=.82$ )										
to practice my computer or typing skills.	.12	.10	.04	.08	.25	-.08	.14	.07	<b>.72</b>	.08
to conduct a video conference or send digital files.	.25	.05	.03	.33	-.18	.11	-.03	.03	<b>.55</b>	.19
Factor 10: <i>Surveillance</i> ( $m=3.63$ ; $sd=.85$ )										
to become invisible.	.09	.08	.01	.06	.11	.26	-.02	.10	.10	<b>.78</b>
to know who is on-line now.	.22	.17	.11	.12	.10	.05	.27	-.01	.15	<b>.66</b>

**Table 8 Continued**

Gratifications sought items “I use Instant Messaging....”	Factors									
	1	2	3	4	5	6	7	8	9	10
Eigenvalue	3.33	3.15	2.85	2.46	2.31	1.98	1.96	1.85	1.64	1.58
Reliability	.81	.80	.79	.75	.72	.74	.68	.66	.46	.63
Percentage variance explained (Total: 62.461%)	9.01	8.51	7.70	6.66	6.25	5.35	5.29	5.01	4.44	4.26

The first research question asked the gratifications sought of IM use from Taiwanese students were; those original 37 statements loaded on 10 factors and each factor had an eigenvalue greater than 1.0, accounting for 62.46% of the total variances in IM use. Each factor was defined with a new factor name according to the loaded statements. These factors were: *Flexibility*, *Escape*, *Convenience*, *Companionship*, *Socialization*, *Control*, *Habit*, *Identity*, *Utility*, and *Surveillance*. Three of the initial gratifications sought statements were excluded, for the reason that the factor loaded on neither factor with a value more than 0.5.

Factor 1, *Flexibility* (eigenvalue = 3.33), accounted for 9.01% of the explained variance. It was defined by all three mobility and both multitasking statements (Cronbach's's  $\alpha = 0.81$ ). This factor reflected that students used IM because they expected they could talk to many people and do other things at the same time without the limited of situations or hardware devices.

Factor 2, *Escape* (eigenvalue = 3.15), accounted for 8.51% of the explained variance. It was marked by loading all three escape and two entertainment statements (Cronbach's's  $\alpha =$

0.80). This factor depicted students hope to get away from responsibility, daily trouble, or to relax and avoid boredom.

Factor 3, *Convenience* (eigenvalue =2.85), accounted for 7.70% of the explained variance. It mirrored the original three convenience statements developed from previous studies (Cronbach's's  $\alpha = 0.79$ ). This factor described that students anticipated that using IM would make their life more convenient.

Factor 4, *Companionship* (eigenvalue =2.46), accounted for 6.66 percent of the explained variance. It included all of the three companionship statements and one surveillance statement (to update news about my family or friends) with Cronbach's's  $\alpha = 0.75$ . This factor responded that students thought that using IM would bind themselves with their family and friends together not alone.

Factor 5, *Socialization* (eigenvalue =2.31), accounted for 6.25% of the explained variance. It contained two of socialization and one of control statements (feel secure to talk with someone not familiar) with Cronbach's's  $\alpha = 0.72$ . This factor reflected that students believed IM would bring more secure opportunities when knowing new friends.

Factor 6, *Control* (eigenvalue =1.98), accounted for 5.35 percent of the explained variance. It was defined by two of the control statements; and another one loaded on the

socialization factor (Cronbach's  $\alpha = 0.74$ ). This factor explained that students assumed they could control the time of the conversation via IM.

Factor 7, *Habit* (eigenvalue =1.96), accounted for 5.29% of the explained variance. It was composed of all of three habit statements (Cronbach's  $\alpha = 0.68$ ). This factor illustrated that students continuously using IM, would develop a habit and would feel anxious if they didn't use it.

Factor 8, *Identity* (eigenvalue =1.85), accounted for 5.01% of the explained variance. All three identity and one inclusion statement (have to use it in a group or a company) constructed the identity factor (Cronbach's  $\alpha = 0.66$ ). This factor indicated that using IM would allows students to create, enhance, or change their identities.

Factor 9, *Utility* (eigenvalue =1.64), accounted for 4.43% of the explained variance. It comprised two out of three utility statements (Cronbach's  $\alpha = 0.46$ ). This factor marked that the instrumental use of IM would help students to improve their computer skills by conducting some unique functions from IM.

Factor 10, *Surveillance* (eigenvalue =1.57), accounted for 4.260% of the explained variance. Two out of three surveillance statements shaped this factor (Cronbach's  $\alpha = 0.63$ ). This factor depicted students' contradiction of wanting to know who was online, whereas

becomes invisible.

*Convenience* ( $m= 4.50, sd= 0.54$ ) and *Flexibility* ( $m= 3.90, sd= 0.63$ ) were the most salient factors with the highest mean scores among others. *Companionship* ( $m= 3.68, sd= 0.71$ ) and *Control* ( $m= 3.65, sd= 0.88$ ) were also distinct factors whereas *Socialization* ( $m= 3.00, sd= 0.85$ ) and *Identity* ( $m= 2.41, sd= 0.77$ ) were not considered as important factors for Taiwanese students' expectation of IM use.

Primarily, Taiwanese students expected to obtain both convenience and flexibility motivations from IM, but they didn't expect obtaining, increasing or securing, their socialization opportunity nor creating, enhancing, or changing their identity.

The gratifications obtained of IM use from Taiwanese students were also the focus of the first research question. The 37 statements loaded on 9 factors and each factor had an eigenvalue greater than 1.0 accounting for 63.51% of the total variance. Each factor was also defined with a new factor name, according to the loaded statements. These factors were: *Convenience, Escape, Companionship, Socialization, Mobility, Identity, Surveillance, Control, and Utility*. Seven of the gratifications obtained statements were excluded for the reason that the factor loaded neither factor with the value more than 0.5.

**Table 9**  
**Rotated factor loadings of gratifications obtained for IM use**

Gratifications sought items “IM indeed effectively allows me .....”	Factors								
	1	2	3	4	5	6	7	8	9
Factor 1: <i>Convenience</i> ( $m=4.22$ ; $sd=.54$ )									
to communicate with people faster than email.	<b>.72</b>	.04	.19	-.06	.26	-.16	.03	.14	.05
to use it free.	<b>.72</b>	.04	.17	-.06	.26	-.14	.05	.15	.06
to talk with many people at the same time.	<b>.71</b>	.10	.07	.10	.13	.10	.23	.05	.13
access easily.	<b>.70</b>	.06	.21	-.05	.29	-.09	.03	.24	.06
to communicate with people while doing other things.	<b>.65</b>	.15	.01	.19	.17	.11	.19	-.00	.11
to have an alternative way to talk with people.	<b>.60</b>	-.01	.25	.16	.07	.03	.15	.10	.02
to use it as habit.	<b>.55</b>	.22	.17	-.01	.04	.43	-.13	.04	-.01
Factor 2: <i>Escape</i> ( $m=2.95$ ; $sd=.81$ )									
to get away from pressure and responsibilities temporary.	.02	<b>.87</b>	.01	.09	-.00	.06	.10	-.04	.05
to get away from what I am doing or should be doing.	.03	<b>.82</b>	-.06	.18	-.01	.11	.17	-.02	-.01
to avoid feel bored when I have nothing to do.	.18	<b>.65</b>	.23	.15	.18	.07	-.06	.07	.04
to deal with daily trouble.	.13	<b>.56</b>	.30	.07	-.05	.15	-.03	.15	.28
to feel anxious if I don’ use it.	.10	<b>.52</b>	.06	.28	-.10	.42	-.16	-.07	.01
Factor 3: <i>Companionship</i> ( $m=3.95$ ; $sd=.71$ )									
to maintain relationship with family members or friends.	.18	.13	<b>.82</b>	.085	.05	.06	.05	.07	.03
to feel closer to my family members or friends.	.22	.13	<b>.77</b>	.08	.10	.01	.00	.08	.07
to get updates news about my family or friends.	.33	.06	<b>.68</b>	-.04	.10	.05	.29	-.02	.09
Factor 4: <i>Socialization</i> ( $m=3.19$ ; $sd=.85$ )									
to know new people without worry or pressure.	.20	.12	.07	<b>.76</b>	.13	.07	.10	.04	.21
to have a blind date.	.04	.20	.02	<b>.73</b>	.10	.14	.07	-.05	.105
to feel more secure to talk with someone not familiar.	.08	.19	.14	<b>.69</b>	-.01	.03	.03	.22	.01
Factor 5: <i>Mobility</i> ( $m=3.89$ ; $sd=.77$ )									
to send any digital files without storing device.	.33	.01	.08	.03	<b>.75</b>	.05	.22	.01	.10
to use it in any situation.	.36	.11	.07	.16	<b>.72</b>	.07	.03	.01	.09
to use it on any computer.	.40	.03	.07	.11	<b>.69</b>	.21	.05	.05	.03
Factor 6: <i>Identity</i> ( $m=2.85$ ; $sd=.85$ )									
have to use it in a group or a company	-.07	.04	-.03	-.07	.08	<b>.58</b>	.28	-.05	.35
to share some secrets online which I can’t tell people.	.02	.17	.00	.37	.02	<b>.55</b>	-.02	.18	.17
to let people know about me through my blog.	-.09	.14	.23	.30	.09	<b>.53</b>	.09	.18	.07



**Table 9 Continued**

Gratifications sought items “IM indeed effectively allows me .....”	Factors								
	1	2	3	4	5	6	7	8	9
Factor 7: <i>Surveillance</i> ( $m=3.84$ ; $sd=.79$ )									
to become invisible.	.30	.03	-.00	.28	.01	.11	<b>.67</b>	.22	-.01
to conduct a video conference or send digital files.	.20	.11	.20	-.03	.32	.02	<b>.64</b>	-.03	.11
Factor 8: <i>Control</i> ( $m=3.86$ ; $sd=.76$ )									
to select and block people that I want to talk.	.27	.05	-.00	.08	-.01	.06	.16	<b>.81</b>	
to choose when to talk and when stop to talk.	.14	.07	.14	.11	.10	.07	-.01	<b>.76</b>	
Factor 9: <i>Utility</i> ( $m=3.44$ ; $sd=.87$ )									
to complete my research, assignments, work or study.	.22	.04	.15	.12	.05	.19	.02	.01	<b>.79</b>
to practice my computer or typing skills.	.06	.16	.07	.16	.14	.04	.09	.04	<b>.75</b>
Eigenvalue	4.60	3.41	2.79	2.74	2.44	2.24	1.82	1.76	1.69
Reliability	.85	.81	.80	.76	.83	.59	.55	.69	.65
Percentage variance explained (Total: 63.506%)	12.44	9.23	7.53	7.40	6.60	6.06	4.92	4.76	4.58

Factor 1, *Convenience* (eigenvalue = 4.60), accounted for 12.44% of the explained variance. It was defined by, not only all three convenience and both multitasking statements, but one socialization (to have an alternative way to talk with people) and one habit (use it as habit) statement (Cronbach’s  $\alpha = 0.85$ ). This factor demonstrated that students actually think IM is convenient because IM is free, easy, and fast and allows them to talk with many people and do other things at the same time. This alternative way to talk is also convenient for them to make using IM as a habit.

Factor 2, *Escape* (eigenvalue = 3.41), accounted for 9.23% of the explained variance.

Similar to gratifications sought, it consisted of all of three escape, one entertainment and one

habit statement (to feel anxious if I don't use it) which replaced another original entertainment statement (to have relax) with Cronbach's  $\alpha = 0.80$ . This factor depicted students actually got away from responsibility, daily trouble, or avoided boredom. They would feel anxious if they didn't use IM to satisfy their need of escape.

Factor 3, *Companionship* (eigenvalue =2.79), accounted for 7.53% of the explained variance. Conformed to gratifications sought, it was composed of two companionship and one surveillance statements (Cronbach's  $\alpha = 0.80$ ). One of the companionship (to feel less lonely and be loved) was excluded. This factor illustrated that students literally maintained, and bound, themselves with their family and friends closer but not really with their self.

Factor 4, *Socialization* (eigenvalue =2.74), accounted for 7.40% of the explained variance. It corresponded to gratifications sought that two socialization and one control statement (feel secure to talk with someone not familiar) were included (Cronbach's  $\alpha = 0.76$ ). This factor indicated that IM truly provided students with more secure opportunities when knowing new friends.

Factor 5, *Mobility* (eigenvalue =2.44), accounted for 6.60% of the explained variance. It contained all three motility statements and independence from the flexibility factor from gratifications sought (Cronbach's  $\alpha = 0.83$ ). This factor exhibited that the unique

characteristic of mobility factor was generally utilized and recognized by students.

Factor 6, *Identity* (eigenvalue =2.24), accounted for 6.06% of the explained variance. It was marked by loading two identity and one inclusion (have to use it in a group or a company) statement, while the other identity statement (to be someone else) was eliminated (Cronbach's  $\alpha = 0.59$ ). This factor interpreted that although IM certainly allows students to create and enhance their identities, they could not change their identities by using IM.

Factor 7, *Surveillance* (eigenvalue =1.82), accounted for 4.92% of the explained variance. It was shaped by one surveillance and one utility statement. One (to know who is online) was replaced by a utility (to conduct a video conference or send files) statement (Cronbach's  $\alpha = 0.55$ ). The statement (to see who is online) was not included for the reason that the loading factor was less than the accepted value. This factor explained the contradiction of the students who wanted to know who was online, whereas became invisible. Hence, the obtained statement to see who was online was weakened by IM invisible function.

Factor 8, *Control* (eigenvalue =1.76), accounted for 4.76% of the explained variance. It was composed of two control statements, while the other one, complied with gratifications sought, loaded on the socialization factor (Cronbach's  $\alpha = 0.69$ ). This factor answered that controlling the time of conversation from IM was really obtained by students.

Factor 9, *Utility* (eigenvalue =1.69), accounted for 4.58% of the explained variance. It contained two utility statements while one (to conduct a video conference or send digital files) was removed to the surveillance factor and replaced by the other utility statement (to complete my research, assignments, work or study) with Cronbach's  $\alpha = 0.65$ . This factor also reflected the instrumental aspect of IM use that indeed helped students to complete their research or study and improve their computer skills.

*Convenience* ( $m= 4.21, sd= 0.54$ ) and *Companionship* ( $m= 3.95, sd= 0.71$ ) were the most salient factors with highest mean scores among others. *Mobility* ( $m= 3.88, sd= 0.77$ ) and *Control* ( $m= 3.85, sd= 0.76$ ) were also distinct factors, whereas *Escape* ( $m= 2.95, sd= 0.806$ ) and *Identity* ( $m= 2.85, sd= 0.864$ ), were not considered important factors to satisfy Taiwanese students' needs. Generally speaking, Taiwanese students really obtained both convenience and companionship from IM, but it could not help them to escape from reality nor to create, enhance, or change their identity.

To sum up, corresponding to the descriptive statistics, there was no big difference between gratifications sought and obtained after conducting principal components analysis. Some the expectations of IM factors, such as *Control* and *Socialization*, were obtained while others, such as *Flexibility* or *Habit*, were excluded or changed after students actually

employed IM. *Mobility* factors were independent from the *Flexibility* factor gratifications sought, while the statements of Habit factors were relocated to *Convenience* and *Escape* factors with gratifications obtained. These 9 and 10 factors of gratifications sought and obtained, still highly maintained the original 13 gratifications sought and obtained derived from preceding research.

### **Gratifications and IM use**

For the second research question, Pearson correlations analysis was employed to investigate the relationship of gratifications obtained to the frequency of IM use. Each of the 9 factors identified by the previous principal components analysis (factor analysis) was used in this correlation test. Before answering the second research question, however, this study found that the IM use among respondents was high. Over 80% percent of respondents used IM for more than 4 years and 75% of them used IM everyday in an average week. The mean of average IM use in a day was 4.06 hours.

Pearson correlations were computed between the new 9 factors of gratifications obtained and the frequency of IM use patterns (how long have respondents used IM, how often do respondents use IM per week, and how many hours do respondents spend on IM per day). These correlations were reported in **Table 10**.

*Convenience* was positively associated with length of IM use ( $r=0.12, p < 0.05$ ) and hours spent on IM ( $r=0.10, p < 0.05$ ). Individuals who obtained the benefit of fast, free, easy, and ability to talk to many people while doing other things at the same time from IM use, were more likely to spend more hours on it. The *Escape* gratification was highly correlated with frequency of IM use per week ( $r=0.14, p < 0.05$ ) and hours spent ( $r=0.22, p < 0.05$ ). Those who need to escape from pressure, or trouble, would tend to increase the number of hours they spent more on IM. Factors of *Socialization* were also highly, and positively, corresponded between the length ( $r=0.11, p < 0.05$ ) and hours ( $r=0.14, p < 0.05$ ) of using IM. Those who needed security, or privacy, conducted another way of talking that would incline IM use to everyday with a larger number of hours. The table revealed that *Identity* factors were positively related to the hours of using IM ( $r=0.20, p < 0.05$ ).

Taiwanese students tend to spend more hours on IM uploading their photos and articles, sharing secrets, and feeling a sense of belonging in a group in order to obtain the need of creating and enhancing their identity. *Utility* factors showed a positive relationship with the number of IM hours used ( $r=0.13, p < 0.05$ ). Students spend more and more hours on IM because serves as a tool to help them complete their research, study, and work or enhance their computer or typing skills.

**Table 10**

**Pearson correlations: IM gratifications obtained and frequency of IM use pattern**

Correlates ( <i>r</i> )	<i>Convenience</i>	<i>Escape</i>	<i>Companionship</i>	<i>Socialization</i>	<i>Mobility</i>	<i>Identity</i>	<i>Surveillance</i>	<i>Control</i>	<i>Utility</i>	M	Std.
<i>Convenience</i>										4.22	.54
<i>Escape</i>	.283**									2.95	.81
<i>Companionship</i>	.488**	.301**								3.95	.71
<i>Socialization</i>	.269**	.439**	.210**							3.19	.85
<i>Mobility</i>	.600**	.208**	.330**	.264**						3.89	.77
<i>Identity</i>	.169**	.387**	.185**	.425**	.206**					2.85	.85
<i>Surveillance</i>	.438**	.170**	.314**	.293**	.397**	.228**				3.84	.79
<i>Control</i>	.345**	.183**	.247**	.266**	.234**	.167**	.271**			3.86	.76
<i>Utility</i>	.303**	.289**	.289**	.318**	.294**	.362**	.273**	.155**		3.44	.87
Frequency											
Length of use	.122*	-.003	.056	.008	.000	.004	.039	.028	-.040	3.29	.75
Times per week	.090	.141**	.019	.112*	.029	.063	-.069	-.010	.014	3.66	.67
Hours per day	.102*	.221**	.029	.138**	.110*	.198**	.001	.002	.125*	4.06	3.86

\* Correlation is significant at the 0.05 level (2-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed).

Hierarchical regression analysis was used to test the influence of gratifications obtained in predicting Taiwanese students use IM pattern after controlling for the influences of demographic variables: gender, age, education, and grade (**Table 11**).

The table shows that the age of Taiwanese students had significant predictive power over the length of using IM. This result indicates that older students use IM longer than young students. The results, corresponding to correlation table, further indicate that *Convenience* (beta=.37,  $p<.05$ ) and *Mobility* (beta=-.133,  $p<.05$ ) significantly predict the length of IM use. The demographics and gratifications obtained combined explained 5.7% of the total variance in length of IM use. Not only age (beta=-.033,  $p<.05$ ), but students' gender (beta=-.164,  $p<.05$ ) and education (beta=.147,  $p<.05$ ) were also significant predictors of the frequency of IM use. Being male, younger, and having higher education of Taiwanese students leads to more frequent IM use. After controlling the demographic influence, three gratifications obtained: *Convenience* (beta=.190,  $p<.05$ ), *Escape* (beta=.101,  $p<.05$ ) and *Surveillance* (beta=-.095,  $p<.05$ ) were also found to be significant predictors for frequency of Taiwanese students IM use. However, the previous correlation indicated that there is a positive relationship between *Surveillance* gratifications and frequency IM use.

The demographic characteristics were not significant predictors for the hours Taiwanese



students spent on IM. The regression results show slightly difference from correlation table that only *Escape* (beta=.758,  $p<.05$ ) and *Identity* (beta=.671,  $p<.05$ ) were the significant predictors for hours of IM use. The higher lever of gratifications for *Escape* and *Identity*, the more hours Taiwanese students would spend on IM.

**Table 11**  
**Hierarchical regression analysis: Demographics and gratifications obtained on IM use**

Predictors	Pattern of IM use		
	Length of IM use (Beta)	Frequency of IM use (Beta)	Hours of IM use (Beta)
Demographics:			
Gender	-.001	-.164*	-.240
Age	.036*	-.033*	.087
Education	.060	.147*	-.324
Grade	.003	-.003	-.111
Adjusted R <sup>2</sup> (%)	.039	.026	-.006
Gratifications:			
<i>Convenience</i>	.374*	.190*	.557
<i>Escape</i>	-.052	.101*	.758*
<i>Companionship</i>	-.046	-.048	-.481
<i>Socialization</i>	.002	.062	.086
<i>Mobility</i>	-.133*	-.006	.289
<i>Identity</i>	.051	-.009	.671*
<i>Surveillance</i>	.001	-.095*	-.421
<i>Control</i>	-.013	-.034	-.305
<i>Utility</i>	-.019	-.029	.219
Adjusted R <sup>2</sup> (%)	.057	.048	.058

Note: Table reports beta coefficients from multiple regression analysis

\* Coefficient is significant at the 0.05 level.

### **Gender, gratifications, and IM use**

The relationship between the gender of Taiwanese students, the level of gratifications obtained, and frequency of IM use, focus on the third and fourth research questions. The results revealed that there are significant differences between men and women in gratifications obtained and IM use.

An independent-sample *t*-test comparing the mean scores of males and females (**Table 12**), found significant difference between the means of *Convenience* dimensions ( $t=-2.95$ ,  $df=404$ ,  $p=0.00$ ). Females ( $m=4.28$ ,  $sd=0.53$ ) obtained a higher level of gratification; significantly higher than males ( $m=4.12$ ,  $sd=0.55$ ). On the contrary, no significant differences were found for the *Escape* and *Utility* dimensions in levels of gratification for males and females.

Although males and females have slight discrepancies in levels of gratification on *Companionship* ( $t=-1.70$ ,  $df=404$ ,  $p=0.09$ ), *Socialization* ( $t=1.89$ ,  $df=404$ ,  $p=0.06$ ), and *Control* ( $t=-1.85$ ,  $df=404$ ,  $p=.065$ ) factors, the differences were not statistically significant. Similar patterns appeared in the *Mobility* ( $t=1.42$ ,  $df=404$ ,  $p=0.16$ ) and *Identity* ( $t=1.46$ ,  $df=404$ ,  $p=0.15$ ) aspects that differed in levels of gratifications, but was not significant in statistics.

**Table 12**  
**Independent-samples *t*-test: Gender differences in gratifications obtained and pattern of IM use**

	Gender	N	Mean	Standard Deviation	t	df	Sig. (2-tailed)
Gratifications obtained							
<i>Convenience</i>	M	169	4.123	.548	-2.953	404	.003*
	F	237	4.282	.528			
<i>Escape</i>	M	169	2.918	.816	-.735	404	.463
	F	237	2.978	.801			
<i>Companionship</i>	M	169	3.882	.711	-1.703	404	.089
	F	237	4.003	.703			
<i>Socialization</i>	M	169	3.286	.879	1.887	404	.060
	F	237	3.125	.823			
<i>Mobility</i>	M	169	3.823	.751	-1.421	404	.156
	F	237	3.933	.781			
<i>Identity</i>	M	169	2.923	.845	1.460	404	.145
	F	237	2.799	.845			
<i>Surveillance</i>	M	169	3.607	.849	-5.211	404	.000*
	F	237	4.008	.701			
<i>Control</i>	M	169	3.775	.798	-1.850	404	.065
	F	237	3.916	.721			
<i>Utility</i>	M	169	3.423	.875	-.371	404	.711
	F	237	3.456	.873			
Pattern of IM use							
Length	M	169	3.31	.772	.387	404	.699
	F	237	3.28	.735			
Frequency	M	169	3.76	.583	2.615	404	.009*
	F	237	3.58	.718			
Hours	M	169	4.193	4.307	.569	404	.569
	F	237	3.971	3.519			

\* *t*-test is significant at the 0.05 level.

The independent-samples *t* test calculated the female gratifications score to use IM for knowing who was online ( $m=4.01$ ,  $sd=.70$ ) compared to the male gratifications score ( $m=3.61$ ,  $sd=.85$ ). This finding reflected a significant difference ( $t=-5.21$ ,  $df=404$ ,  $p=0.00$ ) in

statistics. Gender difference performed no significant difference in the *Utility* ( $t=-5.21$ ,  $df=404$ ,  $p=0.00$ ) dimension.

The last research question asked if there was a gender difference in IM use frequency; the independent-sample  $t$  test revealed that there was a significant difference ( $t=2.62$ ,  $df=404$ ,  $p=0.01$ ) between gender (**Table 12**). The mean score of male frequency of IM use per week ( $m=3.76$ ,  $sd=.58$ ) was significantly higher than the mean score of females ( $m=3.58$ ,  $sd=.72$ ).

No significant difference was found ( $t=.39$ ,  $df=404$ ,  $p=.70$ ) between gender and the length of IM use. The mean score of males ( $m=3.31$ ,  $sd=.77$ ) was not significantly different from the mean of females ( $m=3.28$ ,  $sd=.74$ ). Similar results appeared when applying the independent-samples  $t$  test to compare the mean score of males ( $m=4.19$ ,  $sd=4.31$ ) and females ( $m=3.97$ ,  $sd=3.52$ ) on how many hours were spent on IM. No significant difference was found ( $t=.57$ ,  $df=404$ ,  $p=.57$ ).

## **CHAPTER 5**

### **DISCUSSION**

This chapter provides conclusions reached from the results of this study, along with a discussion of the limitations of this study, and suggestions for future research. The quantitative study applied the Uses and Gratifications approach not only to identify the gratifications sought and obtained from IM use by Taiwanese students, but to provide information about how those gratifications are related to frequency of use of this new communication technology and gender.

This study revealed that most of the respondents in Taiwan have adequate background and experience on the Internet, which resulted in high penetration of IM. Most of Taiwanese students have used more than one IM provider for more than four years. This finding indicates that IM's popularity has grown rapidly among Taiwanese students and would become more and more important in the future. Similar results correspond to the pattern of IM use, as the majority of respondents spent 7 to 21 hours on IM per week. The number of people and categories in their contact list illustrated that IM allows a wide range connection of social network, which is consistent with prior research (Dimmick, Ramirez, Wang, & Lin, 2007). The evidence of high frequency IM use supported the assumption by Perse and Dunn (1998) that adopting new communication technology causes audiences' to change their media

use pattern because new media may displace similar needs satisfied with the use of traditional media.

According to the Uses and Gratifications theory, as mentioned before, people who have different social or psychological needs actively seek media messages to gratify those needs by exposing themselves to different media or consuming media in different patterns (Katz et al., 1979). Scholars generally agree that the Uses and Gratifications approach is especially applicable to the study of new communication technologies, which require active audience participation (i.e., Becker & Schoenbach, 1989; Johnson & Kaye, 2003; LaRose, Mastro, & Eastin, 2001; Lin, 1999; Morris & Ogan, 1996; Papacharissi & Rubin, 2000; Perse & Dunn, 1998; Rafaeli, 1986; Ruggiero, 2000; Stafford & Gonier, 2004; Williams, Stover, & Grant, 1994; Weister, 2001).

This study supports the assumption from previous research that although different media can satisfy different needs, traditional motives of mass media could also be satisfied by using new communication technology (Papacharissi & Rubin, 2000). To verify this assumption, this study employed the matrix of gratifications based on combining categories from previous studies of traditional, or new and interpersonal gratifications: interpersonal, television, phone, cell phone and the Internet. New gratifications of IM use, however, were not discovered in

this finding. It is safe to say that IM, as a new communication technology, satisfied a combination of expected needs typically derived from both traditional media (television, phone, cell phone, and the Internet) and interpersonal communication. The present findings verify the idea that traditional gratifications are applicable to this new interactive communication technology; *escape* and *companionship* for television use, *socialization* and *utility* for phone use, *mobility* for cellular phone use, *identity*, *multitasking*, or *surveillance* for Internet use, and *control* for interpersonal communication.

The results of the present study, regarding gratifications sought and obtained, largely provide confirmatory support for previous U&G studies. This result found that the contemporary IM users in Taiwan seek a mix of gratifications, whether from traditional media, new media, or interpersonal communication. To specify, 10 factors (*Flexibility*, *Escape*, *Convenience*, *Companionship*, *Socialization*, *Control*, *Habit*, *Identity*, *Utility*, and *Surveillance*) were identified as significant for the gratifications sought and 9 factors (*Convenience*, *Escape*, *Companionship*, *Socialization*, *Mobility*, *Identity*, *Surveillance*, *Control*, and *Utility*) for the gratifications obtained from IM use by Taiwanese students emerged in this study.

Generally, the gratifications that Taiwanese students obtained were consistent with the

gratifications they sought. Only *habit* was eliminated in the gratifications obtained dimensions. The results also suggested that there are significant correlations between gratifications sought and the corresponding gratifications obtained statements. These, overall high correlations, indicated that students in Taiwan are actively selective and able to satisfy their needs when it comes to IM use. More specifically, the online questionnaire reflected that Taiwanese students obtained high satisfactory levels of gratifications from the IM use.

Further, the results for the second research question also revealed there are significant correlations between gratifications obtained and the frequency of IM use. The hierarchical regression also provided confirmation about the influence of gratifications on predicting IM use pattern of Taiwanese students after controlling for the influences of demographic variables. These results suggested that those respondents, who indicated that IM was able to gratify their needs, used IM for more hours. Several scholars (Blumler & Katz, 1974; Palmgreen, Wenner, & Rosengren, 1985; Wenner, 1982; Dimmick, Sikand, & Patterson, 1994) have already supported the idea that gratifications obtained to be a better predictor of audience members' media dependency, than gratifications sought. The positive correlations between gratifications obtained and frequency of IM use is also consistent with recent research on IM use (Dimmick, Ramirez, Wang, & Lin, 2007). Not all of the obtained



gratifications were significantly correlated to respondents' IM use pattern. The purpose of the control factor, for instance, is to control whether people talk to who they want or not, but the off-line message function weakens the gratifications for control of the conversation.

Respondents could not control whether to start or end the conversation because recently more and more users, such as company groups, also applied IM as the alternative communication tool to deal with the work or daily routine. Similarly, the surveillance factor was also weakened by the invisible function because off-line friends in their contact lists may just select the invisible function to avoid being found.

However, the results only provide evidence of the relationship between gratifications obtained and the pattern of IM use, we assuming that each gratification independently influences IM use. It is possible that one gratification influences another and does not directly influence Taiwanese students IM use. They may contribute to other factors and indirectly influence different pattern of IM use. Due to the scope of this study, the possibilities of interactions between gratifications were not included.

Some interesting gender differences for gratifications obtained and frequency of IM use were also found and supported in previous studies. Female IM users in Taiwan obtained more convenience and surveillance than their male counterparts. Female respondents reported

using IM because it is free, fast, and easy to use allowing them to talk to many people while doing other things and it provides another way to talk to people. Surveillance provides females security that they could be invisible, to avoid being disturbed by the people they don't want to talk to. Similar findings for these gender differences can be found in the prior research (Dimmick, Sikand, & Patterson, 1994; O'Keefe & Sulanowski, 1995; Leung & Wei, 2000). Males in this study, on the other hand, gained higher levels gratifications for companionship and identity compared to females. That may be because males don't prefer lengthy verbal interactions and IM provides an alternative way to maintain the relationship and feel closer with their friends or family without weakening their masculine social identity. Although females gained significantly more gratifications than males, male students frequently spent more hours on IM than females, perhaps because female students are more likely to be invisible on IM instead of appearing online.

## **Conclusions**

This study applied the U&G approach to examine why Taiwanese students use IM, identifying the motivation for using it and the gratifications they obtained from it. The results showed 10 gratifications sought and 9 gratifications obtained from IM use. It reveals that current Taiwanese students seek and obtain a mix of gratifications from traditional, new

media, and interpersonal communication, which provides support for previous U&G studies.

This study not only reveals that there are significant correlations between gratifications sought and the corresponding gratifications obtained statements, but between gratifications obtained and the frequency of IM use. These results are also consistent with previous studies of positive relationships between gratifications obtained and the frequency of media use.

Gender differences that lead to different gratifications obtained and the frequency of IM use were also found and supported by previous studies. Female IM users in Taiwan obtained more convenience and surveillance than their male counterparts. Males in this study, on the other hand, gained higher level gratifications for companionship and identity compared to females. Although females gained significantly more gratifications than males, male students frequently spent more hours on IM than females.

### **Implications**

The findings of this study have theoretical and practical implications, applying the U&G theory to this new communication technology and its application in Taiwan.

The results of this study suggest that the U&G approach has high theoretical utility in explaining why Taiwanese students use IM. This approach is also applicable for future research that study new media effects before there are new theoretical frameworks to explain

those new communication technologies more effectively. Scholars also stated that the U&G approach can help them understand the uses of attributes (Strover & Grant, 1994), but a clearer understanding of the relationship between the individual user and the technology is needed before their effect can be evaluated (Newhagen & Rafaeli, 1996). The U&G approach has been applied to explain the use of a wide range of new communication technologies because with more and more media choices and motivations, satisfaction is a very important component of audience analysis. The U&G theory can be applied to a wide range of conventional mass media, as well as to interpersonal communication (Rubin, Perse, & Barbato, 1988) and new communication technologies, such as the Internet (LaRose, Mastro, & Eastin, 2001; Kaye & Johnson, 2002; Papacharissi & Rubin, 2000; Perse & Dunn, 1998; Stafford & Gonier, 2004). The findings of this study supported the tenets of the U&G theory to a great extent and reconfirmed the findings of previous U&G studies.

This study also suggests that IM, as a component of the Internet, has specific characteristics that satisfy the motivations and gratifications from both traditional media and non-traditional media, such as the Internet and interpersonal communication. Not only does IM serve as a mass medium, but it also plays an important role combining new communication media and interpersonal communication. This result echoes the assumption

that new communication technology may displace similar needs with the use of traditional media (James, Wotring, & Forrest, 1995; Perse & Dunn, 1998). The media-substitution hypothesis also stated that audiences may substitute the use of a functionally similar medium for another. Although such media-substitution is not transparent, especially between traditional media and computer-mediated communication, channel. Lin (2000) indicated that it should depend on whether new media could compete with old media; for cost-efficiency, perceived communication utilities, and gratification expectations. The findings, furthermore, also indicate that Taiwanese students spend high amounts of hours in an average week on IM. Combining the findings from this study, Taiwanese students obtained different gratifications related to traditional media, but also to the Internet and interpersonal communication and used IM for long periods of time. From those points of view, IM could be perceived as a new emerging media and a possible substitute for traditional media in the future.

Taiwanese students frequently used IM to communicate with their family and friends. The high penetration rate of IM also suggests that it has entered into daily use for students, accompanying the penetration of household computers in Taiwan. In practical terms, this indicates that the environment and the fundamental structure of the Internet in Taiwan have already become mature for developing a high level information industry. Also, the

advertising business could consider adjusting their budget, not just for traditional media, but for this new communication technology.

The result show current market share of IM providers in Taiwan and contributes those providers a reference to apply a similar business model in different market. In addition, some of the gratifications Taiwanese students sought, such as “to be someone else” and “to have a blind date”, were not satisfied by IM. IM providers may need to take these findings into consideration to develop more features or functions to attract more users to use their product.

### **Limitations and future research**

This study explored how Taiwanese students’ use IM from a Uses and Gratifications perspective. Compared with previous research, this study is one of the first to focus on the new communication technology, Instant Messaging. Furthermore, this study is one of the first to investigate the gratifications sought and obtained by Taiwanese students, a culturally distinct group. Different from traditional media, such as newspaper, magazine, radio, and television, which offer content for the audience; the content of IM is produced by the audiences, or users, similarly to other new interactive media, such as e-mail, the bulletin boards system and the Internet. In addition to producing content, IM also allows users to modify or create new interfaces or functions. Such characteristics make this new technology

so unique that the existing gratifications derived from previous research may no longer be sufficient in understanding this communication technology in the future.

Moreover, different IM providers attract their customers by offering different features that may result in completely different gratifications from the audience. Skype, for example, is known for the high quality of voice communication. People tend to use it as a telephone tool when they want to communicate with their family or friends far away without being charged. Accordingly, different features offered by different IM provider could possibly lead to different gratifications obtained. Take this study, for example; most Taiwanese students selected MSN to communicate with their family or friends, but its features didn't allow students to randomly find people they don't know or having a blind date. On the other hand, ICQ provides students the opportunity to search subjects by entering gender, age, and locations they prefer. Varied IM use, therefore, causes varied gratifications sought and obtained from audiences. To solve this problem, further research about IM use is necessary. Future researchers may need to create more dimensions based, not only on different media, but also on adding new areas such psychology to investigate the gratifications sought and obtained from IM use. Perspective researchers may not only apply gratification dimensions from previous studies, but consider creating open-ended questions to explore new

gratifications have appeared in traditional media because the evolutionary attributes of IM.

By the premise that IM use must be under the connection of the Internet, this study assumed that Taiwanese students who have the access to the Internet, were the target audience in this study. For that reason, this study recruited Taiwanese students by posting an invitation letter on universities' BBS permitting participation. Students who willingly participated in this study were connected with the online questionnaire by clicking the link contained in the invitation letter. Although this technique would eliminate the limitation of the geographic barrier and was less expensive than other traditional methods, such as interview and telephone survey, it encountered a major challenge that the sample selection is not representative for all Taiwanese students. In other words, the probability sampling is not feasible for the online questionnaire method because it could not be produced from a census list and random digit dialing. Wimmer and Dommick (1994) stated that there is no way to determine if the Internet sample is representative of the population; whether the sample was selected or volunteered. However, by its nature the Internet poses a unique set of problems in guaranteeing a random sample of respondents (Kaye & Johnson, 2002). The purpose of this study was to investigate the gratifications sought and obtained of respondents from using IM software that requires more experienced and active users to complete the questionnaire



instead of generating a random sample. Although findings of this study could not be generalized to the public, the purposive sampling still provides findings that may be representative of a specific subset of the population (Wimmer & Dommick, 1994).

Another challenge encountered in this study was that the use of new technology may blur the distinctions between pattern and frequency of IM use. IM, as software, requires constant Internet connection; it is hard to define whether users are using IM or just leave it on for long periods of time. The use of IM is not simply limited to open a conversation window with family or friends, it may contain other activities that forward digital files, upload articles, photos, and music on the blog created by IM providers, check who is online, or even to open IM when people are connecting to the Internet. Furthermore, because this study uses a questionnaire that asks respondents to report their frequency of use IM, there might be discrepancies of perspectives between actual uses and self-reports (Wimmer & Dominick, 1994). The results of this study may be inaccurate because of the ambiguous definition of IM use. For that reason, future researchers who used the same instrument to investigate new communication technologies, the explicit definition should be contained in the questionnaire in order to retrieve a more standard agreement among respondents not only to use aspect, but to other dimensions.

Although administering an online questionnaire is easy, free, fast, and with no geographic limitation, verifying the identity of the respondents is another challenge that might endanger the validity of this study. It is impossible to ensure that the Taiwanese students recruited for this study were actually those who completed the online questionnaire. The respondents of this study may have graduated from school for a long time or may have completed the questionnaire carelessly; even the respondents were recruited only from the universities' BBS that could reduce the identity problem. According to Wimmer and Dominick (1994), the only way to solve this problem is to locate the outliers from the collected data. This method was not employed considering the various IM use pattern. For the identity part, researchers in the future could ask the respondents to enter their student ID numbers in the beginning of the online questionnaire. This method may allow researchers to confirm the data with current student numbers from university. Also, those who already graduated from the school may drop the questionnaire after knowing that the researcher could check their identity. On the other hand, researchers could utilize the response sets in their questionnaire for inserting a question asking respondents to answer with a certain number or not to answer the question at all. This method allows respondents to quickly identify the reckless respondents by examining whether respondents answer wrong numbers.

Gathering demographic information of Taiwanese students was limited due to the scope of this study. Not only gender differences, but other demographic characteristics may lead to different gratifications sought and obtained or distinct frequency of IM use. Future researchers should take these demographic characteristics, such as location, income, and dependency of IM, into consideration. Other factors may also explore to reveal more information about new communication technologies. For example, Taiwanese students studying in the U.S. may gain different gratifications from students in Taiwan; or U.S. students and Taiwan students having a dissimilar frequency of IM use. Any possible influential elements may need to be investigated to construct more complete empirical data for further research and help the IM providers offer more functions that students may expect to gain from this new technology. If a cultural difference was proved as the significant factor, the IM providers could take the study of IM use in Taiwanese students as a business model when they want to enter the Chinese students' market using the reason that they share the same cultural structure leading to similar gratifications and patterns of IM use.

## REFERENCES

- Ackerman, M. S. & Palen, L. A. (1996). The Zephyr help instance: Promoting ongoing activity in a CSCW system. In *Proceedings of ACM CHI 1996 Conference on Human Factors in Computing System*, ACM Press, 268-275.
- Armstrong, C. B. & Rubin, A. M. (1989). Talk radio as interpersonal communication. *Journal of Communication*, 39(2), 84-94.
- Becker, L. B., & Schoenbach, K. (1989). When media content diversifies: Anticipating audience behaviors. In Becker L. B., & Schoenbach K. (Eds.), *Audience responses to media diversification: Coping with plenty*. Hillsdale, NJ: Erlbaum.
- Berelson, B. (1949). What missing the newspaper means. In Lazarsfeld, P. F. & Stanton, F. N. (Eds.). *Communication research*, New York, Harper.
- Blumler, J. G. & Katz, E. (1974). *The use of mass communication: Current perspective on gratifications research*. Beverly Hill, Calif: Sage publications.
- Blumler, J. G. & McQuail, D. *Television in politics*. Chicago: University of Chicago Press, 1969.
- Bradner, E., Kellogg, W. A., & Erickson, T. (1999). The adoption and use of BABBLE: A field study of chat in the workplace. In *Proceedings of the sixth European conference on computer-supported cooperative work (ECSCW) 1999*, Dordrecht, Netherlands: Kluwer Academic Publishers.
- Claisse, G. & Rowe, F. (1987). The telephone in question: Questions on communication. *Computer Networks and ISDN System*, 14, 207-219.
- Cowles, D. (1989). Consumer perceptions of interactive media. *Journal of Broadcasting & Electronic Media*, 33, 83-89.
- December, J. (1996). Units of analysis for Internet communication. *Journal of Communication*, 46(1), 14-37.

- Dicken-Garcia, H. (1998). The Internet and continuing historical discourse. *Journalism and Mass Communication Quarterly*, 75, 19-27.
- Dimitrova, D. (2002). Internet uses and gratifications: An online survey of Bulgarians at home and abroad. *International Communication Bulletin*, 37(1-2), 36-49.
- Dimmick, J., Ramirez, A., Wang, T., & Lin, S. F. (2007). "Extending society": the role of personal networks and gratification-utilities in the use of interactive communication media. *New Media & Society*, 9(5), 795-810.
- Dimmick, J., Sikand, J & Patterson, S. (1994). The gratification of the household telephone: Sociability, instrumentality and reassurance. *Communication Research*, 21, 643-663.
- Dreze, X. & Zufryden, F. (1997). Testing Web site design and promotional content. *J. Advertising Research*, 37(2), 77-91.
- Finn, S. (1977). Origins of media exposure: Linking personality traits to TV, radio, print and film use. *Communication Research*, 24, 507-529.
- Fischer, C. S. (1992). *American calling: A social history of the telephone to 1940*. Berkeley: University of California Press.
- Greenberg, B. S. (1973). Gratifications of television viewing and their correlates for British children. In Blumler, J. G. & Katz, E., *The uses of mass communication: Current perspectives on gratifications research*, 71-92, Beverly Hills, CA: Sage.
- Grinter, R. E., & Palen, L. (2002). IM everywhere: Instant messaging in teen life. In *Proceedings of the 2002 ACM conference on computer supported cooperative work*, New Orleans, LA.
- Herbsleb, J. D., Atkins, D. L., Boyer, D. G., Handel, M., & Finholt, T. A. (2002). Introducing Instant Messaging and Chat in the workplace. In *Proceedings of the ACM conference on human factors in computing systems (CHI) 2002*, New York, NY: ACM Press.

- Industry Standards and Technology Organization Affiliation with the IEEE and the IEEE standards Association: IEEE-ISTO (2002). *The wireless village initiative: The mobile IMPS initiative white paper*, Retrieved December 12, 2007, from [http://www.openmobilealliance.org/tech/affiliates/wv/wv\\_white\\_paper.pdf](http://www.openmobilealliance.org/tech/affiliates/wv/wv_white_paper.pdf).
- InsightXplorer Ltd. (2003). 台灣即時訊息服務市場現狀 (i.e. Research of Instant Messenger Market in Taiwan), Retrieved December 12, 2007, from [http://www.insightxplorer.com/news/news\\_09\\_23.html](http://www.insightxplorer.com/news/news_09_23.html).
- InsightXplorer Ltd. (2006). IM 普及率破九成 (i.e. The rate of penetration of IM break through 90%), Retrieved December 12, 2007, from [http://www.insightxplorer.com/news/news\\_03\\_24\\_06.html](http://www.insightxplorer.com/news/news_03_24_06.html).
- InsightXplorer Ltd. (2006). 上網率創新高，近六成民眾連網 (i.e. Over sixty percent of population connecting the Internet), Retrieved December 12, 2007, from [http://www.insightxplorer.com/news/news\\_12\\_27\\_06.html](http://www.insightxplorer.com/news/news_12_27_06.html)
- Institute for Information Industry (2005). Household online 2005, Retrieved December 12, 2007, from <http://www.find.org.tw/eng/news.asp?msgid=202&subjectid=4&pos=0>.
- Institute for Information Industry (2005). Internet subscribers and users 2005, Retrieved December 12, 2007, from <http://www.find.org.tw/eng/news.asp?pos=0&subjectid=4&msgid=203>
- Institute for Information Industry (2005). Taiwan ranked third DSL country in Point Topic's latest report, Retrieved December 12, 2007, from <http://www.find.org.tw/eng/news.asp?pos=0&subjectid=2&msgid=261>.
- Institute for Information Industry (2005). Taiwan ranked 5th in global online engagement, Retrieved December 12, 2007, from <http://www.find.org.tw/eng/news.asp?pos=0&subjectid=2&msgid=233>.
- iResearch (2005). *China Instant Messaging Research Report*, [http://english.iresearch.com.cn/html/instant\\_messenger/detail\\_views\\_id\\_7451.html](http://english.iresearch.com.cn/html/instant_messenger/detail_views_id_7451.html).

- Isaacs, E., Walendowski, A., & Ranganathan, D. (2002). Hubbub: A sound-enhanced mobile instant messenger that supports awareness and opportunistic interactions. In *Proceedings of the ACM conference on human factors in computing systems (CHI) 2002*, New York, NY: ACM Press.
- James, M. L., Wotring, C. E., & Forrest, E. J. (1995). An exploratory study of the perceived benefits of electronic bulletin board use and their impact on other communication activities. *Journal of Broadcasting & Electronic Media*, 39, 30-50.
- Johnson, T. J., & Kaye, B. K. (2003). Around the World Wide Web in 80 ways. *Social Science Computer Review*, 21(3), 304-325.
- Kaye, B. K. & Johnson, T. J. (2002). Online and in the know: Uses and gratifications of the Web for political information. *Journal of Broadcasting & Electronic Media*, Mar2002, 46(1), 54-72.
- Katz, E. (1959). Mass communication research and the study of popular culture: An editorial not on a possible future for this journal. *Studies in public communication*, 2, 1-6.
- Katz, E. (1979). The uses of Becker, Blumler, and Swanson. *Communication Research*, 6, 74-83.
- Katz, E., Blumler, J. G., & Gurevitch, M. (1974). Uses and gratification research. *Public Opinion Quarterly*, 37 (4), 509-524.
- Keller, S. (1977). The telephone in new, and old, communications. In Ithiel de Sola Pool (Ed.). *The social impact of the telephone*, Cambridge, MA: MIT press, 281-298.
- Kuehn, S. A. (1994). Computer-mediated communication in instructional settings: A research agenda. *Communication Education*, 43, 171-182.
- LaRose, R., Mastro, D., & Eastin, M. S. (2001). Understanding Internet usage: A social-cognitive approach to uses and gratifications. *Social Science Computer Review*, 19(4), 395-414.

- Lazarsfeld, P. F., Berelson, B., & Gaudet, H. (1948). *The people's choice* (2<sup>nd</sup> ed.). New York: Columbia University Press.
- Lazarsfeld, P. F. & Stanton, F. N. (Eds.) (1942). *Radio research*. New York, Duell, Sloan and Pearce.
- Leung, L. & Wei, R. (2000). More than just talk on the move: Uses and gratifications of the cellular phone. *Journalism & Mass Communication Quarterly*, 77(2), 308-320.
- Lin, C. A. & Jeffres, L. (1998). Predicting adopting of multimedia cable service. *Journalism Quarterly*, 75, 251-275.
- Lin, C. A. (1999). Online service adoption likelihood. *Journal of Advertising Research*, 39, 79-89.
- McLeod, J. M., & Becker, L. B. (1981). The uses and gratifications approach. In Nimmo, D. D. & Sanders K. R., *Handbook of political communication*, 67-99, Beverly Hills, CA: Sage.
- McQuail, D. (1994). The rise of media of mass communication. In McQuail, D. (Eds.), *Mass Communication theory: An introduction*, London: Sage, 1-29.
- Morris, M. & Ogan, C. (1996). The internet as mass medium. *Journal of Communication*, 46(1), 39-50.
- Nardi, B. A., Whittaker, S., & Bradner, E. (2000). Interaction and outeraction: Instant Messaging in action. In *Proceedings of ACM conference on computer supported cooperative work*. New York: NY Press, 79-88.
- Newhagen, J. & Rafaeli, S. (1996). Why communication researchers should study the Internet: A dialogue. *Journal of Communication*, 46(1), 4-13.
- Noble, G. (1987). Discriminating between the intrinsic and instrumental domestic telephone user. *Australia Journal of Communication*, 11, 63-85.



- Noble, G. (1989). Towards a “uses and gratifications” of the domestic telephone. In *Telefon und Gesellschaft*, Berlin: Volker Spiess, 198-307.
- O’Keefe, G. J. & Sulanowski, B. K. (1995). More than just talk: Uses and gratifications, and the telephone. *Journalism and Mass Communication Quarterly*, 72(4), 922-933.
- Palmgreen, P. & Rayburn, J. D. II. (1979). Uses and gratifications and exposure to public television. *Communication Research*, 6, 155-180.
- Palmgreen, P., Wenner, L., & Rosengren, K. (1985). Uses and gratifications research: The past ten years. In Rosengren, K., Wenner, L., & Palmgreen, P. (Eds.), *Media gratifications research*, 11-37, Beverly Hills, CA: Sage.
- Papacharissi, Z. & Rubin, A. M. (2000). Predictors of Internet use. *Journal of Broadcasting & Electronic Media*, 44(2), 175-197.
- Perse, E. M. & Courtright, J. A. (1993). Normative images of communication media: Mass and interpersonal channels in the new media environment. *Human Communication Research*, 19(4), 485-503.
- Perse, E. M. & Dunn, D. G. (1998). The utility of home computers and media use: Implications of multimedia and connectivity. *Journal of Broadcasting & Electronic Media*, Fall1998, 42(4), 435-457.
- Quarterman, J. S. & Carl-Mitchell, S. (1993). The computing paradigm shift. *Journal of Organizational Computing*, 3, 31-50.
- Rogers, E. (1986). *Communication technology: The new media*. New York: Free Press.
- Rubin, R. B., Perse, E. M., & Barbato, C. A. (1998). Conceptualization and measurement of interpersonal communication motives. *Human Communication Research*, 14(4), 602-628.
- Rubin, A. M. (1983). Television uses and gratifications: The interactions of viewing patterns and motivations. *Journal of Broadcasting*, 27, 37-51.
- Rubin, A. M. (1993). Audience activity and media use. *Communication Monographs*, 60,

98-103.

Rogers, E. (1986). *Communication Technology: The new media*. New York: Free Press.

Ruggiero, T. E. (2000). Uses and gratification theory in the 21<sup>st</sup> century. *Mass Communication and Society*, 3(1), 3-37.

Shiu, E., & Lenhart, A. (2004). How Americans use instant messaging. *Pew Internet & American Life Project*. Retrieved December 12, 2007, from <http://207.21.232.103/index.asp>.

Stafford, T. & Gonier, D. (2004). What Americans like about being online. *Communications of the ACM*, Nov2004, 47(11), 107-112.

Stafford, T. F. & Stafford, M. R. (1998) Uses and gratifications of the World Wide Web: A preliminary study. In *Proceeding of the 1998 American Academic of Advertising Conference*. Muehling D., Ed. Washington State University, Pullman, WA.

Suchman, E. (1942). An invitation to music. In Lazarsfeld, P. F. & Stanton, F. N. (Eds.), *Radio research*. New York: Duell, Sloan and Pearce.

Tang, J. C., Yankelovich, N., Begole, J. B., Van Kleek, M., Li, F., & Bhalodia, J. (2001). ConNexus to awarenex: Extending awareness to mobile users. In *Proceedings of the conference on human factors in computing systems (CHI) 2001*. New York, NY: ACM Press, 221-228.

Voida, A., Newstetter, W., & Mynatt, E. D. (2002). When conventions collide: The tensions of Instant Messaging attributed. In *Proceeding of the conference on human factors in computing systems (CHI) 2002*. New York, NY: ACM Press, 187-194.

Weister, E. B. (2001). The functions of Internet use and their social and psychological consequence. *CyberPsychology and Behavior*, 4(6), 723-743.

Wenner, L. A. (1982). Gratifications sought and obtained in program dependency: A study of network evening news programs and 60 Minutes. *Communication Research*, 9, 539-560.

- Windahl, S. (1981). Uses and gratifications at the crossroads. *Mass Communication Reviews Yearbook*, 2, 174-185.
- Williams, F., Dordick, H., & Jesuale, H. (1985). Focus group and questionnaire development for exploring attitudes towards telephone service. In Williams F. (Ed.), *Social research and the telephone*. Los Angeles: Dordick and Associates.
- Williams, F., & Rice, R. E. (1983). Communication research and new media technologies. In R. Bostrom (Ed.), *Communication yearbook*, 7 (pp. 200-224). Beverly Hills, CA: Sage.
- Williams, F., Strover, S., & Grant, A. E. (1994). Social aspects of new media technologies. In Bryant, J. & Zillmann, D. (Eds.), *Media effects: Advances in theory and research*, 463-482, Hillsdale, NJ: Erlbaum.
- Wimmer, R. D. & Dominick J. R. (1994). *Mass media research: An introduction*. (8th Ed.), California: Wadsworth.
- Wolfe, K. M., & Fiske, M. (1949). Why children read comics. In Lazarsfeld, P. F. & Stanton, F. N. (Eds.), *Communication research*. New York: Harper.

## **APPENDIX A**

### **QUESTIONNAIRE**

#### **I. INFORMED CONSENT DOCUMENT**

Dear fellow student:

My name is Ko-Jung Chen, a graduate student in the Greenlee School of Journalism and Communication at Iowa State University. For my master's thesis, I am investigating about why young people in Taiwan use Instant Messaging. You are being invited to participate in this study because you represent a college or master's student that will be the major workforce in the future. The purpose of this study is to help establish a research foundation for the empirical examination of the new model of communication by asking students motivation and satisfaction of Instant Messaging (IM) use. This is a research study. Please take your time in deciding if you would like to participate.

If you agree to participate in this study, your participation will require about 10 to 15 minutes of your time to complete the online questionnaire. During the study, you will be asked about IM use and select agreement with a number of statements. You may skip any question that you do not wish to answer or that makes you feel uncomfortable. There is no foreseeable risk at this time from participating in this study and there is no cost for participating in this study. Also, if you decide to participate in this study, there will be no direct benefit to you. It is hoped that the information gained in this study will benefit the future researcher for further understanding of this communication technology. Your participation in this study is completely voluntary and you may refuse to participate or leave the study at any time. If you decide to not participate in the study or leave the study early, it will not result in any penalty or loss of benefits to which you are otherwise entitled.

Please be assured that your responses will be kept confidential to the extent permitted by applicable laws and regulations and will be made public only for research purposes. However, federal government regulatory agencies, auditing departments of Iowa State University, and the Institutional Review Board (a committee that reviews and approves human subject research studies) may inspect and/or copy your records for quality assurance and data analysis. All the data collected from you will be stored on the personal computer with access code. Only the researcher and researcher's academic adviser, Dr. Daniela Dimitrova, will have access to the data. If the results are published, your identity will not be collected in the survey; the whole data will be destroyed after 2 years from now.

If you have any questions about this research, please feel free to get in touch with me.

For further information about the study contact: Chen, Ko-Jung, +1-515-520-1324, [kojung@iastate.edu](mailto:kojung@iastate.edu), Office 04A, Hamilton Hall, Iowa State University, Ames, Iowa, 50011. You can also get in touch with my academic adviser, Daniela V. Dimitrova: +1-515-294-4435, [danielad@iastate.edu](mailto:danielad@iastate.edu), 117 Hamilton Hall, Iowa State University, Ames, Iowa, 50011. If you have any questions about the rights of research subjects or research-related injury, please contact the IRB Administrator, +1-515-294-4566, [IRB@iastate.edu](mailto:IRB@iastate.edu), or Director, +1-515-294-3115, Office of Research Assurances, Iowa State University, Ames, Iowa 50011.

Choosing the “agree” button below indicates that you have read this statement and have decided to participate in this study voluntarily. If you choose the left button “disagree” below this indicates that you have read this statement and have decided not to participate in this study. You may withdraw from this study or choose not to participate at any time.

Thank you in advance for participating in this study.

Ko-Jung Chen  
Graduate Student  
Greenlee School of Journalism & Mass Communication  
Iowa State University  
Iowa 50010, U.S.A.

Disagree

Agree

**II. PRELIMINARY QUESTIONS**

**2. How long have you been using the Internet (including e-mail, accessing websites, etc.)?**

- Less than 1 year
- 1 to 3 years
- 4 to 6 years
- 7 to 9 years
- 10 years or more

**3. Have you ever use Instant Messaging?**

- Yes
- No (Stop and proceed to Part III)

**III. IM USE AND HABIT**

**4. What Instant Messenger service provider do you use now? (Please check all that applies).**

- AIM (AOL Instant Messenger)
- Google Talk
- ICQ
- MSN (Windows Live Messenger)
- QQ
- Skype
- Trillian
- Yahoo Messaging
- Other Instant Messenger (please specify): \_\_\_\_\_

**5. How long have you been using Instant Messenger?**

- Less than 1 year
- 1 to 3 years
- 4 to 6 years
- 7 to 9 years
- 10 years or more

**6. How often do you use Instant Messenger in an average week?**

- Less than once a week
- 1 to 3 times a week
- 4 to 6 times a week
- 7 times a week

**7. How many hours do you spend Instant Messaging in an average day?**

\_\_\_\_\_ hours

**8. How did you first know about Instant Messenger?**

- Through friends
- Through family
- Through the mass media (newspapers, magazines, books, TV, radio)
- Through e-mails
- Through advertisements
- Others (Please specify): \_\_\_\_\_

**9. How many friends are in your IM contact list?**

\_\_\_\_\_ friends

**10. Below are categories of people who may be in your IM contact list. Please check which categories can be found in your own contact list. (Please check all that applies).**

- Family or relatives
- Friends or classmates
- Colleagues
- Teachers
- Customers
- Others (Please specify): \_\_\_\_\_

**11. Please complete the phrase, “*I use Instant Messenger...*” with the words listed below. Select the button that best describes your level of agreement or disagreement with each of the complete statements.**

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
to choose when to talk and when stop to talk with people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to select people that I want and block I don't want to talk.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to feel more secure to talk with someone not familiar.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to maintain relationship with family members or friends.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to feel less lonely and be loved.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to feel closer to my family members or friends.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
because it is easy to access.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
because it is faster to talk to people than email.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
because it is free.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to have a relax.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to use the inactive functions or games such as winks and emoticons for fun.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to avoid feel bored when I have nothing to do.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to get away from pressure and responsibilities temporary.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to help me deal with daily trouble.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to get away from what I am doing or should be doing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
because it's my habit to use it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
because I feel anxious if I don' use it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
because I want to use it when I am online.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



- |                                                                                            |                          |                          |                          |                          |                          |
|--------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| to be someone else.                                                                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| to share some secrets online which I can't tell people face to face.                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| to let people know about me through uploading my personal articles, pictures, and video.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| because I have to use it in a group or a company.                                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| because my friends or family members use it.                                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| because I can use IM on any computer.                                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| because I can send any digital files without storing device.                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| because I can use IM in any situation.                                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| because I can communicate with people while doing other things such as work or assignment. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| because I can talk with many people at the same time.                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| to know new people without worry or pressure.                                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| to have a blind date.                                                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| because it provides me an alternative way to talk with people.                             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| to get updates news about my family members or friends.                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| to know who is on-line now.                                                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| because I can become invisible.                                                            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| to help with my research, assignments, work or study.                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| to practice my computer or typing skills.                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| to conduct a video conference or send digital files with people.                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

#### IV. IM USE AND GRATIFICATION

**12. Please complete the phrase, “Instant Messenger indeed effectively allows (makes) me .....” with the words listed below. Select the button that best describes your level of agreement or disagreement with each of the complete statements.**

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
to choose when to talk and when stop to talk with people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to select people that I want and block I don't want to talk.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to feel more secure to talk with someone not familiar.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to maintain relationship with family members or friends.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to feel less lonely and be loved.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to feel closer to my family members or friends. access easily.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to communicate with people faster than email.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to use it free.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to have a relax.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to use the inactive functions or games such as winks and emoticons for fun.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to avoid feel boring when I have nothing to do.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to get away from pressure and responsibilities temporary.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to deal with daily trouble.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to get away from what I am doing or should be doing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to use it as habit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to feel anxious if I don' use it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to use it when I am online.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to be someone else.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to share some secrets online which I can't tell	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

people face to face.

to let people know about me through uploading my personal articles, pictures, and video.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
have to use it in a group or a company	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to use it when my friends or family members use it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to use it on any computer.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to send any digital files without storing device.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to use it in any situation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to communicate with people while doing other things such as work or assignment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to talk with many people at the same time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to know new people without worry or pressure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to have a blind date.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to have an alternative way to talk with people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to get updates news about my family members or friends.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to know who is on-line now.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to become invisible.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to complete my research, assignments, work or study.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to practice my computer or typing skills.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
to conduct a video conference or send digital files with people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**13. Overall, how satisfied are you with the IM does in providing you with the things you are seeking?**

- Extremely unsatisfied
- Somewhat unsatisfied
- Neutral
- Somewhat satisfied
- Extremely satisfied

**V. DEMOGRAPHIC INFORMATION**

**14. Gender:**

- Male
- Female

**15. Age:** \_\_\_\_\_

**16. Major:** \_\_\_\_\_

**17. Education level:**

- Undergraduate
- Graduate
- Doctoral

**18. Class standing:**

- First year
- Second year
- Third year
- Forth year
- Fifth year
- Sixth year or more

-----end of questionnaire-----

Thank you again for your assistance in this research. Your contribution helps us understand this phenomenon is greatly appreciated. Again, any information obtained from this study will only for academic purpose and remains strictly confidential. If you are interested in the results, please feel free to contact me by e-mail.

Sincerely

Ko-Jung Chen  
kojung@iastate.edu  
Graduate Student  
Greenlee School of Journalism and Mass Communication  
Iowa State University  
Ames, IA 50010, U.S.A.

**APPENDIX B****QUESTIONNAIRE CODEBOOK**

Question no.	Variable name	Variable label	Values	Missing Value
<b>Part I</b>				
1	participation	Decision of participation	1=disagree 2=agree	0
<b>Part II</b>				
2	timeinternet	How long using the Internet	1= <1 year 2= 1-3 years 3= 4-6 years 4= 7-9 years 5= >10 years	0
3	imuse	Have you ever use IM	1= yes 2= no	0
<b>Part III</b>				
4a	whatimaim	What IM do you use	1= AIM	0
4b	whatimgoogle		2= Google	
4c	whatimicq		3= ICQ	
4d	whatimmsn		4= MSN	
4e	whatimqq		5= QQ	
4f	whatimskype		6= Skype	
4g	whatimtrillian		7= Trillian	
4h	whatimyahoo		8= Yahoo	
4i	whatimother		9= Other	
5	longuse	How long have you use IM	1= <1 year 2= 1-3 years 3= 4-6 years 4= 7-9 years 5= >10 years	0
6	oftenuse	How often do you use IM per week	1= >1 time 2= 1-3 times	0

			3= 4-6 times	
			4= 7 times	
7	hoursuse	How many hours do you spend IM a day		0
8	firsthear	How did you first hear about IM	1= friends 2= family 3= media 4= e-mail 5= ad 6= others	0
9	contactlist	How many friends in IM		0
10	fricategory	Which categories are in you IM contact list	1= family or relatives 2= friends or classmates 3= colleagues 4= teachers 5= customers 6= others	0
11a	gscontroltalk	to choose when to talk and when stop to talk with people	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
11b	gscontroltalkppl	to select people that I want and block I don't want to talk	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
11c	gscontrolsecure	to feel more secure to talk with someone not familiar	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0

11d	gscompmaintain	to maintain relationship with family members or friends	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
11e	gscomplove	to feel less lonely and be loved	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
11f	gscompclouser	to feel closer to my family members or friends	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
11g	gsconveasy	because it is easy to access	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
11h	gsconvfast	because it is faster to talk to people than email	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
11i	gsconvfree	because it is free	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
11j	gsentertainrelax	to have a relax	1= strongly disagree 2= disagree 3= neutral 4= agree	0

			5= strongly agree	
11k	gsentertainfun	to use the inactive functions or games such as winks and emoticons for fun	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
11l	gsentaertainbore	to avoid feel bored when I have nothing to do	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
11m	gsescappressure	to get away from pressure and responsibilities temporary.	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
11n	gsescaptrouble	to help me deal with daily trouble.	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
11o	gsescapshould	to get away from what I am doing or should be doing.	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
11p	gshabitusedto	because it's my habit to use it.	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
11q	gshabit anxious	because I feel anxious if I don' use it.	1= strongly disagree 2= disagree 3= neutral	0



			4= agree	
			5= strongly agree	
11r	gshabitoline	because I want to use it when I am online.	1= strongly disagree	0
			2= disagree	
			3= neutral	
			4= agree	
			5= strongly agree	
11s	gsidentpretend	to be someone else.	1= strongly disagree	0
			2= disagree	
			3= neutral	
			4= agree	
			5= strongly agree	
11t	gsidentsecret	to share some secrets online which I can't tell people face to face	1= strongly disagree	0
			2= disagree	
			3= neutral	
			4= agree	
			5= strongly agree	
11u	gsidentknowme	to let people know about me through uploading my personal articles, pictures, and video	1= strongly disagree	0
			2= disagree	
			3= neutral	
			4= agree	
			5= strongly agree	
11v	gsinclugroupuse	because I have to use it in a group or a company	1= strongly disagree	0
			2= disagree	
			3= neutral	
			4= agree	
			5= strongly agree	
11w	gsinclufriuse	because my friends or family members use it	1= strongly disagree	0
			2= disagree	
			3= neutral	
			4= agree	
			5= strongly agree	
11x	gsmobilcomput	because I can use IM on any computer	1= strongly disagree	0
			2= disagree	

			3= neutral	
			4= agree	
			5= strongly agree	
11y	gsmobildigitalfil	because I can send any digital files without storing device.	1= strongly disagree	0
			2= disagree	
			3= neutral	
			4= agree	
			5= strongly agree	
11z	gsmobilsitu	because I can use IM in any situation	1= strongly disagree	0
			2= disagree	
			3= neutral	
			4= agree	
			5= strongly agree	
11aa	gsmultitask	because I can communicate with people while doing other things such as work or assignment	1= strongly disagree	0
			2= disagree	
			3= neutral	
			4= agree	
			5= strongly agree	
11ab	gsmultitalk	because I can talk with many people at the same time	1= strongly disagree	0
			2= disagree	
			3= neutral	
			4= agree	
			5= strongly agree	
11ac	gssocialnewfri	to know new people without worry or pressure	1= strongly disagree	0
			2= disagree	
			3= neutral	
			4= agree	
			5= strongly agree	
11ad	gssocialblindate	to have a blind date	1= strongly disagree	0
			2= disagree	
			3= neutral	
			4= agree	
			5= strongly agree	
11ae	gssocialaltertalk	because it provides me an	1= strongly disagree	0

		alternative way to talk with people	2= disagree 3= neutral 4= agree 5= strongly agree	
11af	gssurveillupdate	to get updates news about my family members or friends	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
11ag	gssurveillonline	to know who is on-line now	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
11ah	gssurveillinvisib	because I can become invisible	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
11i	gsutilityresearch	to help with my research, assignments, work or study	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
11j	gsutilityskill	to practice my computer or typing skills	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
11k	gsutilityvideome	to conduct a video conference or send digital files with people	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0

Part IV				0
12a	gocontroltalk	to choose when to talk and when stop to talk with people	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12b	gocontroltalkppl	to select people that I want and block I don't want to talk	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12c	gocontrolsecure	to feel more secure to talk with someone not familiar	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12d	gocompmaintain	to maintain relationship with family members or friends	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12e	gocomplove	to feel less lonely and be loved	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12f	gocompcloser	to feel closer to my family members or friends	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12g	goconveasy	access easily	1= strongly disagree 2= disagree 3= neutral	0

			4= agree	
			5= strongly agree	
12h	goconvfast	to communicate with people faster than email	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12i	goconvfree	to use it free	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12j	goentertainrelax	to have a relax	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12k	goentertainfun	to use the inactive functions or games such as winks and emoticons for fun	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12l	goentaertainbore	to avoid feel boring when I have nothing to do	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12m	goescappressure	to get away from pressure and responsibilities temporary	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12n	goescaptrouble	to deal with daily trouble	1= strongly disagree 2= disagree	0

			3= neutral	
			4= agree	
			5= strongly agree	
12o	goescapshould	to get away from what I am doing or should be doing	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12p	gohabitusedto	to use it as habit	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12q	gohabit anxious	to feel anxious if I don' use it	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12r	gohabitonline	to use it when I am online	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12s	goidentpretend	to be someone else	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12t	goidentsecret	to share some secrets online which I can't tell people face to face	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12u	goidentknowme	to let people know about me	1= strongly disagree	0

		through uploading my personal articles, pictures, and video	2= disagree 3= neutral 4= agree 5= strongly agree	
12v	goinclugroupuse	have to use it in a group or a company	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12w	goinclufriuse	to use it when my friends or family members use it	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12x	gomobilcomput	to use it on any computer	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12y	gomobildigitalfil	to send any digital files without storing device	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12z	gomobilsitu	to use it in any situation	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12aa	gomultitask	to communicate with people while doing other things such as work or assignment	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0

12ab	gomultitalk	to talk with many people at the same time	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12ac	gosocialnewfri	to know new people without worry or pressure	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12ad	gosocialblindate	to have a blind date	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12ae	gosocialaltertalk	to have an alternative way to talk with people	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12af	gosurveillupdate	to get updates news about my family members or friends	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12ag	gosurveillonline	to know who is on-line now	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12ah	gosurveillinvisib	to become invisible	1= strongly disagree 2= disagree 3= neutral 4= agree	0



			5= strongly agree	
12ai	goutilityresearch	to complete my research, assignments, work or study	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12aj	goutilityskill	to practice my computer or typing skills	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
12ak	goutilityvideome	to conduct a video conference or send digital files with people	1= strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree	0
13	overallsatisfy	How satisfied are you with the IM	1= extremely unsatisfied 2= Somewhat unsatisfied 3= neutral 4= somewhat satisfied 5= extremely satisfied	
Part V				
14	gender	gender	1= male 2= female	0
15	age	age		0
16	major	major		0
17	education	education	1= undergraduate 2= graduate 3= doctoral	0
18	grade	class standing	1= first year	0

---

2= second year

3= third year

4= forth year

5= fifth year

6= sixth year or

more

---

## ACKNOWLEDGEMENTS

This project would not have been possible without the support of many people. Many thanks to my adviser, Dr. Daniela V. Dimitrova, who read my numerous revisions and helped me make sense of the confusion. Most importantly, she challenged, pushed and guided me in the right direction not only for this project but also in how to conduct research.

Also thanks to my committee members, Dr. Suman Lee and Dr. Brian E. Mennecke, who offered guidance, assistance and support. Thanks to the Iowa State University Greenlee School of Journalism and Communication for awarding me scholarship and assistantship - providing me with the financial means to complete this project. In addition, Miss Kim Curell, the secretary of Greenlee School of Journalism and Communication, helped me to complete many complicated paper works.

I also wish to thank Dr. Meifen Wei, a professor in the Psychology Department who generously offered me access to the online survey website and her student Kelly Liao who assisted me in the construction of and data retrieval from my online questionnaire. Dr. Shihwu Sung, professor in Environmental Engineering and Mrs. Sung who provided counsel and support for my life in Ames, Iowa.

Thanks to my class peer group: Avril De Guzman, Kyung Sun Lee, Sainan Wang, and Susu Qin. They helped me to refine my thesis and provided support for me to go through my two-year learning experience. My roommate, Shulun Tang, my girlfriend Yalan Yang, and friends Hungan Ho, and Yuhsein Shen also provided me moral support in pursuing my graduate degree. Also thanks to the members of the Taiwanese Students Association (TSA): Chinghsi Cheng, Powen Chung, Wenhua Hsien, Hsinkai Liao, Yitung Lo, Chihchia Su, Chihsiang Tsai, Chihyuan Weng, Chiawen Wu, and Tsungpin Yeh for their support.

Finally, words alone cannot express the thanks I owe to my parents, Chungli Chen and Yuchu Tsai, who support and encourage my decision all the way and provided me love and better life without worry. It is their support that helped me to develop the drive I needed to succeed in life. Without them, I could never have successfully completed this project.