THE EFFECTS OF EMOTICONS AND TEXT-MESSAGING ON SOCIAL INTERACTION: PLAYFULNESS IN MOBILE INSTANT MESSAGING

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Abstract

Mobile instant messaging is the communication technology revolution that is changing the way people communicate. The adoption rate is surging and the massive growth is experienced worldwide. Prior studies in instant messaging has been primarily concerned with its task relevant or functional aspects, with less attention on social interaction aspects. Drawing from media richness theory, present research highlights that social interaction factors can be facilitated by the enriched communication channel to build closer interpersonal social relationship. Specifically, the findings illustrate that combined effect of text messaging and the use of emoticon, builds information richness which leads to perceived playfulness in mobile instant messaging. Furthermore, the perceived playfulness fostered in the instant messaging process, plays a driving role in facilitating social connectedness, identity expressiveness between the users and the advocacy of mobile instant messaging usage.

Keywords: Mobile Instant Messaging, Emoticon, Text-Messaging, Perceived Playfulness, Social Connectedness

1 INTRODUCTION

Mobile instant messaging which provides online chat over the internet has become a prevalent way of interactive online communication. The adoption of mobile instant messaging has experienced massive growth in recent years, as it offers free chat or minimum cost, thus they have established themselves as a popular way to conduct mobile interaction. By August 2014, WhatsApp has more than 600 Million monthly active user, a global mobile internet users penetration rate of 24%. By Jan. 2015, there are 700 million people actively using WhatsApp worldwide each month, which indicates an upsurge of 100 million people in less than six months (Statista 2014). The amount of messages send out from WhatsApp has already surplus SMS text messages, as messages send out via WhatsApp's IM service are 30 billion messages, which has outnumbered the 20 billion text messages sent daily via SMS (Sánchez 2015). Other mobile instant messaging applications are also gaining wide acceptance, such as data in 2014 shows Facebook messenger has 500 million monthly active users; WeChat has 468 million monthly active users and Line has 170 million monthly active (Statista 2014). Furthermore, according to Informa Telecoms & Mediam 2013, it is predicted that in USA a decrease of profits derived by text messages will drop from $120 billion in 2013 to $96 billion by 2018. What is driving the incredible wide adoption of mobile instant messaging? Despite the pervasive usage of mobile instant messaging worldwide, our understanding on the behavior of mobile interactive communication that is changing the way we communicate every day is far from comprehensive.

Prior studies in instant messaging has been primarily concerned with its task relevant or functional aspects. Such as the effect of ease of use in adoption (Lu et al. 2009); how workers adopt instant messaging in the organizational situations (Fichter 2005; Nardi et al. 2000); the loss of productivity that may occur as a result of instant messaging interruptions and distractions (Thatcher et al. 2008); the use of instant messaging and communicative workload (Rennecker & Godwin 2003); network security compromises (Swartz 2005). However, despite the numerous literatures on instant messaging, there is a lack of extant research to address the critical issue of how mobile instant messaging influences social interaction. Prior research in instant messaging has discussed how friends communicate and how friendship can be enhanced (Huang & Yen 2003), yet the effect of perceived playfulness within instant messaging communication are seldom investigated in depth. What features might facilitate perceived playfulness in mobile instant messaging? How does the perceived playfulness in mobile instant messaging deepen the bonds of friendship? Playfulness which may play a fundamental part in people's social relationships, is relatively ignored in mobile communications literatures. In this paper, we aim to shed light on this important topic to examine the perceived playfulness in mobile instant messaging and its effect on social interaction.

Media richness theory (Daft & Lengel 1984), which is developed from information processing theory, postulates that different communication channels have different levels of capacity to facilitate understanding. The communication channel that exhibits the ability to transmit multiple cues, provide immediate feedback to facilitate personal messages are considered exhibiting high information richness. Though mobile instant messaging can send text messages like other communication devices, it also exhibit an additional unique feature- emoticon, which is visual cues and graphic icons that can express user emotions. We suggest the combined effect of text message and the inclusion of emotional icons, plays an important role to enhance the information richness of mobile instant messaging, which facilitates perceived playfulness in mobile instant messaging. Because playfulness is closely related to social interaction thus it strengthens individual's social connectedness and identity expressiveness in the communication process. Therefore, drawing from media richness theory (Daft & Lengel 1984), present study examines empirically a conceptual model which elucidate how perceived playfulness is made manifest through the combined effect of text message and emoticon, which in turn facilitates social interaction in mobile instant messaging.

2 THEORETICAL FOUNDATION AND HYPOTHESES

2.1 Media Richness Theory

According to media richness theory (Daft & Lengel 1984), communication channel differs on the amount of information that can be conveyed. Media richness indicate the communication channel's capabilities to deliver messages with rich information. The theory postulates that there are four factors that determine communication channel's difference in information richness: (1) the ability of the communication channel to convey multiple cues, such as facial expression, body gesture, vocal inflection (2) instantaneous feedback, such as the immediacy of responses to enquiry 3) language variety, such as adopting various language symbols (4) the ability of the communication channel to convey personalization, such as showing personal emotions (Daft & Lengel 1984). To achieve effective communication, it is necessary that messages are communicated on channels which exhibit adequate and appropriate media richness capacities (Rice 1992). Communication channels such as e-mail, telephone and instant messenger all exhibit varied attributes that show differing richness capacities. Computer mediated communication in general, lack nonverbal cues, and thus limits the range of information exchange which creates distance among users. For instance e-mail transmit messages mainly through text, therefore, it exhibits a limited number of cues. For communication channel that are able to provide verbal and nonverbal cues are considered exhibiting high information richness. Thus mobile instant messaging which allows users send verbal and nonverbal cues through text message and emoticons is considered providing enriched information richness in the communication process.

2.2 Text-Messaging Use and Perceived Playfulness

Instant messaging allows the users to make conversation online, therefore provides close to real-time communication. There are five features in instant messaging that contribute to its popularity: presence awareness, within-medium polychromic communication, "pop-up" receiver notification, silent interactivity, and fleeting transcripts (Rennecker & Godwin 2003). Individual can set up chat room function which allows individuals to chat in groups of individuals, allowing conversation to be conducted among multiple people simultaneously. Playfulness is defined as a situational interaction characteristic between an individual and the situation (Lieberman 1977). Past studies show that people use jokes, creativity and poking fun as a way to build social relationships (Perry & Rachovides 2007). Likewise, these playful behavior are also displayed in computer mediated environment such as mobile instant messaging. Harsh messages such as scolding which has negative impact on friendship are less likely to occur in the context of mobile instant messaging. Instead, friendship building interactions such as leaving and sending messages that playfully poke fun at friends within group are evident in messaging practice. The playfulness may take various forms, such as storytelling (Jacucci et al. 2007); teasing and joking carried out in the instant messaging conversational threads (Kurvinen 2003); playfully creating instant messaging comic strips (Salovaara 2007). Furthermore, riddles and playing spur-of-the-moment games enabled through instant messaging facilitate the perceived playfulness and fun moments that individuals create with each other. Therefore, we hypothesize that the use of text-messaging positively influences perceived playfulness:

H1: Text-messaging use positively influences perceived playfulness.

2.3 Use of Emoticon and Perceived Playfulness

Emoticons is the non-verbal graphical indicator of emotion (Dresner & Herring 2010) and it is commonly used as a surrogate for illustrating the emotional tone and non-verbal gestures, such as facial expressions (Derks et al. 2008). In interpersonal communication, nonverbal cues such as facial expression and body gestures sends out message that compliments verbal context to provide clear understanding (Cui et al. 2010). These nonverbal cues allow the communicators to respond and support other's emotion (Wolf 2000). However, in computer mediated communication, the absence of nonverbal cues constrains the communicators' ability to disseminate social information (Rice 1984). According to media richness theory (Daft & Lengel 1984), communication medium that exhibits the ability to convey multiple cues and convey personal emotions more instantly, can transmit rich

information which facilitates communication effect. In mobile instant messaging, the use of emoticon enable the communicator to offer warm emotional expressions and provide rich social cues, which was lacking in computer-mediated communication (CMC) environment (Tossell et al. 2012). According to Walther (1992), in circumstances where non-verbal cues are not available, it is often that communicators will seek to adopt different forms of communication, such as emoticons (Utz 2000) to express emotions and maintain interpersonal relationship. Past research indicates the adoption of emoticon in text-based communication positively effects the enjoyment experience in instant messaging (Huang et al. 2008), facilitates individuals to reciprocate emotions such as smile, laugh, etc. (Fabri et al. 2005), which in turn may enhances the fun and perceived playfulness in mobile instant messaging. Perceived playfulness is characterized as the extent the individual is attention focused, finds curiosity in the interaction and finds the interaction enjoyable and interesting (Moon & Kim 2001). Many emoticons display figures with fun characters and humorous gestures. Individuals can incorporate playful elements into the more mundane message by sending emoticons that express humor and fun. Prior studies show emoticon are used more by females to express humor, while emoticons are used more by male for teasing and ridicule (Wolf 2000). As a result, not only can personal emotions be expressed by using emoticons, individuals can playfully poke fun at friends with jokes that support the graphical images (Jacucci et al. 2007). Therefore, we hypothesize the use of emoticon positively influences perceived playfulness:

H2: Use of emoticon positively influences perceived playfulness.

2.4   Perceived Playfulness and Social Connectedness

The social aspect of play has been discussed in previous studies, indicating playfulness may be a meaningful feature in social relationship (Salen & Zimmerman 2004). Previous studies indicate that games can provide the opportunity for people to spend time together (Voida & Greenberg 2009) and the playfulness experienced enhance the delightful moments shared together. The enjoyment derived from people having fun together, display affection among people can builds connections and social relationships (Perry & Rachovides 2007). Social connectedness is defined as an enduring and ubiquitous sense of the self in relation to others (Lee & Robbins 2000, p.485). This sense of connectedness enable people to establish the feelings of connection with others, and to identify with those who may be perceived as different from themselves (Kohut 1984). Prior research indicate that in interpersonal interaction, sense of humor and fun in the communication context can reduce social distance between interactants, which can positively enhances interpersonal relationship and builds connectedness (Graham 1995). Therefore, it is hypothesized that the perceived playfulness, created from using text messaging and emoticon in mobile instant messaging positively influences social connectedness.

H3: Perceived playfulness positively influences social connectedness.

2.5   Perceived Playfulness and Identity Expressiveness

Identity expressiveness is characterized as behavior that involves expressing self-identity and social-identity (Thorbjørnsen et al. 2007). Findings in social media interaction indicates that self-expression is one of the key motivator that drive individuals to create user-generated content (Shao, 2009). Past research in human computer interaction literatures indicate that avatars which allow individuals to select differing customization combinations, can be used as a way of self-presentation in CMC. Individuals can freely choose diverse avatar's appearance and use it as to an extent for self-expression (Taylor 2002; Dunn & Guadagno 2012). In a similar manner, many emoticons also display figures with differing fun characteristics that can provide emotional expressions, thus individual can also easily adopt distinctive emoticons for self-expression. Past research indicate that playfulness is related to expressiveness (Glynn & Webster 1992). Therefore, it is hypothesized that when individuals use text messaging and emoticon to communicate with others, the fun and perceived playfulness in the interactive communication enabled by mobile instant messaging is likely to facilitate the identity expressiveness of individuals.

H4: Perceived playfulness positively influences identity expressiveness.

2.6   Perceived Playfulness and Word of Mouth

The significance of word of mouth in social interaction has been emphasized in prior researches (Brown, and Reingen, 1987; Chen, Wang and Xie, 2011). When individuals experience perceived playfulness by using mobile instant messaging, it is likely that the sense of fun and enjoyment derived from the process will facilitate individuals to continue using mobile instant messaging. Moreover, the fun and enjoyment will facilitate individuals to advocate the use of mobile instant messaging among friends. Therefore it is hypothesized that perceived playfulness positively influences WOM intention.

H5: Perceived playfulness positively influences WOM intention.

3   RESEARCH METHODOLOGY

3.1   Samples

An online survey was conducted to collect data. A questionnaire link was posted on a website-Youthwant.com which provides various lifestyle information and topics to discuss for mainly young people. Youthwant.com is also one of the largest online questionnaire platforms in Taiwan where members and nonmembers can participate in online surveys. People who have experiences using mobile instant messaging for communication are invited to join the online survey. 141 usable data was obtained. To empirical test our hypotheses, we chose Line as the context for mobile instant messaging, because it has the most pervasive usage in Taiwan. Sample characteristics are as follows. 40.4% of our respondents are male. Of all the respondents, 5.7% are below 20 years old, 28.4% are between 21 to 30 years old, 29.1% are between 31 to 40 years old, and 36.8% are above 41 years old. Since people using mobile instant messaging for communication are not restricted to young people, both young and old people were included in the sample to increase external validity. Our sample is not restricted to student sample. 17% of our respondents are students, 38.3% are office workers, 21.3% are free lancers, 10.6% belong to the category "military men, government employees and teachers", 3.5% are housekeepers, and 9.3% belong to the "other category". 86.5% of our respondents use mobile instant messaging several times a day. 56% of our respondents have used mobile instant messaging for more than one year.

3.2   Measures

All the measures are adapted from established scales to suit the context of using mobile instant messaging for communication. The items for measuring text-messaging use are adapted from Mahatanankoon (2007). The items are: "I use my mobile phone for text-messaging activities"; " I send text messages to my friends and family using my mobile phone"; " I receive text messages from my friends and family via my mobile phone". Use of emoticon is measured referring to items developed by Huang et al. (2008).The items are: " When I use mobile instant messaging to communicate, I use a great deal of symbols to represent my feelings or emotions"; " When my friends use mobile instant messaging to communicate with me, they often use emoticons to represent their feelings or emotions "; " Emoticon conveys more than just text, other information cues are also conveyed." The items for measuring perceived playfulness are adapted from Cheong and Park (2005). The items were: "When interacting using mobile instant messaging I do not realize the time elapse"; "I feel good when interacting with mobile instant messaging"; "It is fun to use mobile instant messaging". WOM intention is measured referring to the scale developed by Goodwin et al. (1992) and HartLine et al. (1996).The items are: "How likely are you to spread positive WOM about using mobile instant messaging?"; " I would recommend using mobile instant messaging to my friends"; "If my friends were looking for communication apps, I would tell them to try mobile instant messaging".The items for measuring social connectedness are adapted from Lin et al. (2008), the items are: " I am able to relate to my mobile instant messaging friends"; " I am able to connect with the people that I use mobile instant messaging"; " I see my mobile instant messaging friends as friendly and approachable". Identity expressiveness is measured referring to the items used by Pagani et al. (2011), the items are:" Using mobile instant messaging is part of how I express my personality"; " I use mobile instant messaging to express my personal values"; " I often talk to others about mobile instant messaging"; " Other people are often impressed by the way I use mobile instant messaging". Since respondents who have more Internet

experience tend to use Internet-based communication medium such as mobile instant messaging apps for social interaction, Internet experience is used as a control construct. Internet experience is measured using the items developed by Cheong and Park (2005), the items are: " I think that I am familiar with the Internet"; " I spend many hours using the internet."; " I frequently use the internet". Three items are used to measure all the constructs except for identity expressiveness. Identity expressiveness is measured using four items. All of items are measured with seven-point Likert scales.

3.3 Analytical Methods

The two-step approach (e.g., Anderson & Gerbing 1988) is conducted to empirically examine the research hypotheses. The first step is to check the model fit for the measurement model and to assess reliability, convergent validity, and discriminant validity by using confirmatory factor analysis (CFA). Fit indices used include the chi-square statistic with the p-value, RMSEA, SRMR, CFI, and NNFI. The criteria of 'RMSEA < 0.08' (Hair et al. 2010, p. 667), 'SRMR < 0.10' (Hair et al. 2010, p. 668), 'CFI ≥ 0.9' (Hair *et al.*, 2010 p. 669), and 'NNFI ≥ 0.9' (Bentler & Bonett 1980, p. 600) are recommended. Composite reliability (CR) is used as a reliability index. The threshold of 'CR ≥ 0.7' is recommended (Hair et al. 2010, p. 710). Discriminant validity is supported if the confidence interval (± two standard errors) around the correlation estimate between the two constructs does not include 1.0 (Anderson & Gerbing 1988). The second step is to test for the hypotheses by using structural equation modeling (SEM). The paths of the control variable on the endogenous constructs are included in SEM.

4 RESULTS

4.1 Measurement Model

The CFA results are reported in Table 1. Model fit was found to be acceptable (χ^2 =367.79, df = 188, $p < 0.001$, χ^2/df = 1.96; CFI = 0.97; NNFI = 0.97; RMSEA = 0.08; SRMR = 0.05). All constructs are significantly converged ($p < 0.001$) and they are correlated but distinct in that none of the 95% confidence intervals for the population correlations for all pairs of constructs includes one. The alpha coefficients and CR estimates for text-messaging use (α = 0.91, CR = 0.91), use of emoticon (α = 0.80, CR= 0.82), perceived playfulness (α = 0.91, CR = 0.92), WOM intention (α = 0.93, CR = 0.94), social connectedness (α = 0.88, CR = 0.88), and identity expressiveness (α= 0.90, CR= 0.90), and Internet experience (α = 0.91, CR = 0.91) are all greater than 0.70, indicating acceptable reliability.

4.2 Structural Model

Analytical results of the structural model by using SEM are reported. Model fit is acceptable (χ^2 =418.07, df = 200, $p < 0.001$, χ^2/df = 2.09; CFI = 0.97; NNFI = 0.97; RMSEA = 0.08; SRMR = 0.06). All the path coefficients in the conceptual model are significant. Specifically, text-messaging use positively influences perceived playfulness. Use of emoticon positively influences perceived playfulness. Perceived playfulness positively influences, social connectedness, identity expressiveness and WOM intention. Therefore, all the hypotheses are supported by the data. Also, the effects of control construct on endogenous constructs are examined. Internet experience positively influences identity expressiveness (γ = 0.24, $p < 0.001$), but have no influence on perceived playfulness, social connectedness, and WOM intention.

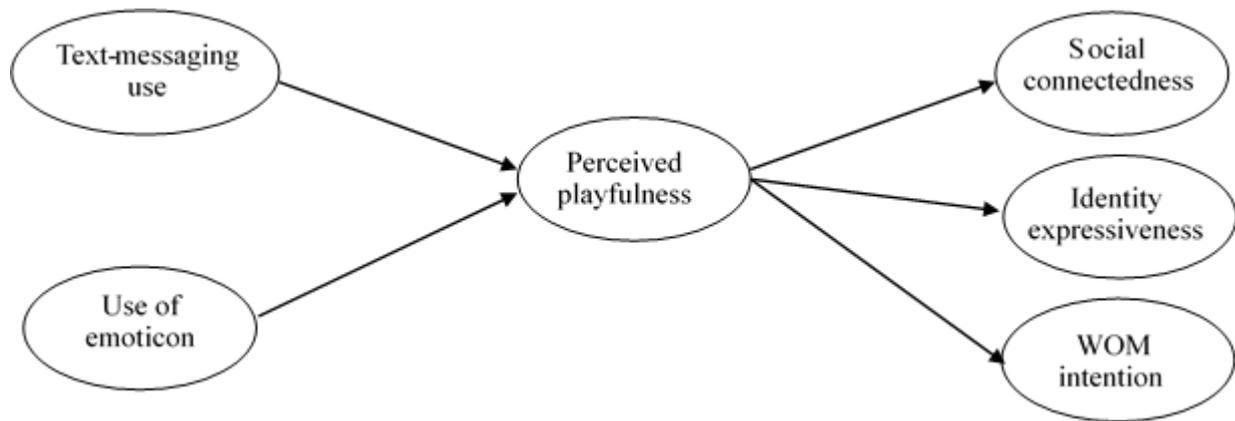*Figure 1.*   *Research Framework*

Note. The effects of Internet experience as a control construct on endogenous constructs are modeled but not are not shown in the figure.

Hypothesized Relationship	*Estimate* [a]	*t Value*	*Conclusion*
H1 Text-messaging use→Perceived playfulness (+)[b]	0.39	3.93	Supported
H2 Use of emoticon→Perceived playfulness (+)	0.47	4.43	Supported
H3 Perceived playfulness→Social connectedness (+)	0.86	9.83	Supported
H4 Perceived playfulness→Identity expressiveness (+)	0.65	7.17	Supported
H5 Perceived playfulnesss→WOM intention (+)	0.84	9.29	Supported

Table 2.   *Structural Model Estimates*

Note. [a] Completely standardized estimates

[b] Hypothesized direction of effect

5   CONCLUSIONS

5.1   Discussion

Drawing from media richness theory (Daft & Lengel 1984), current study examines the driving factors and the consequences of perceived playfulness in mobile instant messaging. Present research highlights that social interaction factors can be facilitated by the enriched communication channel to build closer interpersonal social relationship. Specifically, by adopting both the use of emoticons and text-messaging can facilitate perceived playfulness, which in turn drives social connectedness, identity expressiveness and WOM intention. Media richness indicate the communication channel's capabilities to deliver messages with rich information that impacts communication effect. However, a knowledge gap exists as the underlying mechanism of how it works is less understood. This study contributes to media richness theory by highlighting the role of perceived playfulness in mobile instant messaging. Our results indicated that perceived playfulness is made manifest through the combined effect of emoticon and text messaging. The use of emoticons and text-messaging use can enhance social connectedness and promote opportunities for self-expressiveness, because the use of multiple cues in mobile instant messaging facilitates the sense of playfulness and enjoyment. Our result also contributes to show that emoticons are more effective than text messaging in driving perceived playfulness. The findings of the present study further exemplify that the ability of the communication channel to convey personalization, such as showing personal emotions can significantly strengthen communication effectiveness (Daft & Lengel 1984).

Past studies examine the use of emoticons and text-messaging in a separate manner (e.g., Huang et al. 2008; Mahatanankoon 2007). Present research contributes by examining the combined effects of emoticons and text-messaging, which offers a more comprehensive perspective. Prior studies indicate

that emoticons are used more in social context than in task-oriented context, because it is more appropriate to display personal emotion towards friends (Derks, Arjan & Grumbkow, 2008). Our findings further elucidate the underlying driver that facilitate the use of emoticons among friends, is the fun and perceived playfulness experienced in the communication process. Moreover, our result show that the fun and perceived playfulness experienced in mobile instant messaging enhances the connectedness among friends and word of mouth to use mobile instant messaging.

Managerial Implications

The managerial implication of the present study is twofold. First, the results indicate the combined effects of emoticons and text-messaging facilitate playfulness, which in turn triggers WOM. Hence, the findings accentuate the success of mobile instant messaging apps depends on whether they allow users experience fun and enjoyable when interacting with friends using text-messaging and emoticons. Since emoticons are more effective than texts messaging in facilitating perceived playfulness in mobile instant messaging, mobile instant messaging practitioners can provide a wide varieties of funny emoticons for users to choose from. The success of Line mobile instant messaging is a good example as its popularity is built on its great amount of emoticons. Whilst other mobile instant messaging apps provide less choices of emoticons that can be used to increase the perceived playfulness and fun social interaction. Second, in addition to playfulness, our results also indicate that people use texts messaging and emoticons for self-expression. Hence, one direction in managerial implication is for designers of mobile instant messaging to create apps that allow individuals to easily design their own emoticons. This is because not only can self-made emoticons express one's emotion better than ready-made emoticons, it can also facilitate fun in the process.

5.2   Limitations and Future Research

The findings of present study show that emoticons are more effective than texts messaging in facilitating playfulness of interaction, therefore future studies can explore in more details the types of emoticons that work better in driving playfulness. The limitations of present study have to be noted. First, to further collect a larger sample size is necessary to cover a more diverse population of respondents. Second, the personality factors that may influence the sense of enjoyment is not examined in this study. Thus future studies can also further examine the moderating role of personality factors that may cause distinctive effect in the adoption of emoticon and text messaging in facilitating playfulness and enjoyment in social interactions.

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