

EXAMINATION OF IGNORING MESSAGE BEHAVIOR IN INSTANT MESSENGER

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ABSTRACT

Nowadays, instant messenger has become an indispensable tool for most people, giving them a new way for interpersonal communications. To most of the instant messenger users, ignoring messages being read has become an annoying topic. This study attempts to examine whether the differences in information richness, “read” functionality, and sender-receiver relationship have any impact on the message sender’s expectation of receiver’s immediate reply. The study also investigates the influence on emotional neglect by personal involvement and expectation of immediate reply. A laboratory experiment was used to answer research questions. 360 participants, who were instant messenger users, were randomly assigned into six groups where information richness, read functionality, and sender-receiver relationship were controlled. The findings are as follows: (1) The information richness and read functionality have an impact on the expectation of immediate reply; (2) The sender-receiver relationship has no impact on the message sender’s expectation of immediate reply; (3) Sender’s expectation of immediate reply did not affect the emotional neglect; (4) The level of personal involvement significantly influences emotional neglect.

Keywords: instant messenger, information richness, emotional neglect, personal involvement, read functionality

INTRODUCTION

The Internet has changed the way people communicate. Chatting is no longer confined to face-to-face conversations or phone calls. Due to increasing popularity of mobile devices, mobile-based communication applications such as WhatsApp, Messenger, WeChat, Line become an important part of people’s life when communication is needed. In this article, we called such mobile instant messaging software/application as instant messenger. “Read” functionality is a thoughtful feature provided by some of these apps to show the status of message transmission and response. However, such feature has become users’ concern when their receivers do not reply after reading the message. McClea et al. (2004) defined instant messaging as “the ability to see if a chosen friend, co-worker, or associate is connected to the Internet and if they are, you are then able to exchange ‘real time’ messages with them.” One of the most important features of instant messaging software is that it offers two parties in two distinct locations to exchange messages with almost no delays. Current research related to instant messaging software focuses on the intention to the use, satisfaction, loyalty, relationship development of instant messenger (Ou & Davison, 2011; Zhou & Lu, 2011; Koutamanis et al., 2013). Recent study also examined the influence of users’ behavior based on perception of information richness. Ogara et al. (2014) conducted an empirical study to investigate the factors of social presence and user satisfaction with mobile instant messaging. Perceived richness and perceived social influence were found to positively influence social presence and user satisfaction. Yoon (2015) found that perceived usefulness, perceived enjoyment, and perceived critical mass affected the behavioral intention using instant messaging. Sun et al. (2017) employed a push-pull-mooring framework to understand the mobile instant messaging application users’ switching behavior. Using media richness theory, Tseng et al. (2017) found that language variety has the strongest impact on mobile instant messaging. It was found that providing user-perceived functional, self-expressive, and social values, mobile instant messaging providers would be able to enhance user loyalty (Tseng et al. 2018).

Recent instant messenger offers users a chatting interface to send text, emoji, voices, videos, links, etc. Due to the nature of the software, messages arrive to recipients’ side immediately. It thus builds up an image that the recipients are virtually online for all time. “Read” functionality is a relatively new feature in such software to give senders additional status beyond “delivered”. The senders may sometimes follow their own judgement to determine whether the recipients ignore their messages on purpose. Such receivers’ behavior further renders negative emotions on senders’ side. As a result, the study attempts to answer the following questions:

- Does information richness of instant messenger have any impact on sender's expectation of immediate reply?
- Does read functionality of instant messenger have any impact on sender's expectation of immediate reply?
- Does sender-recipient relationship of instant messenger have any impact on sender's expectation of immediate reply?
- Does information richness of instant messenger have any impact on sender's emotional neglect behavior?
- Does read functionality of instant messenger have any impact on sender's emotional neglect behavior?
- Does sender-recipient relationship of instant messenger have any impact on sender's emotional neglect behavior?
- Does sender's expectation of immediate reply have any impact on sender's emotional neglect?
- Does personal involvement have any impact on sender's emotional neglect?

The rest of paper is organized as follows. Related literature review is provided in the next section, followed by research methodology, analyses and results, and finally conclusion and discussion.

LITERATURE REVIEW

Information Richness

The Media Richness Theory (Daft and Lengel 1984), also known as Information Richness Theory, is "a framework for describing a communication medium's ability to reproduce the information sent over it without loss or distortion". Based on the theory, different media can be ranked based on the information richness of media. Higher ranked medium has better ability to reproduce the information than lowered ranked medium. For example, phone calls cannot reproduce gestures sent over video calls. Thus, the medium offering video calls has higher information richness than a medium offering only phone calls.

Trevino et al. (1990) argued that face-to-face communication was the medium with the highest information richness, followed by telephone, electronic mail, letter, note, memo, special report, and finally, flier and bulletin. The level of richness was based on the timeliness, responsiveness, and flexibility. O'Sullivan (2000) pointed out that "Learner channels could also be used when clarifying unattractive or embarrassing aspects about oneself as a means of muting or avoiding an expected negative response. Learner channels could also be used to benefit the partner." The learner channels were the lowered ranked media with lower level of information richness.

Channel expansion theory (Carlson and Zmud 1999) was a theory to explain and predict user perceptions of the new communication media based on users' perceptions of communication media. Based on different users' perceptions, their expectation on how receivers react may differ.

Expectation of Immediate Reply

In Bandura's social learning theory (1977), it was argued that "most human behavior is learned observationally through modeling: from observing others, one forms an idea of how new behaviors are performed, and on later occasions this coded information serves as a guide for action." The behavior can further be differentiated into efficacy expectation and outcome expectation. The efficacy expectation was positioned between a person and his/her behavior (Gerrig & Zimbardo, 2010), while the outcome expectation was positioned between a person's behavior and outcome (Lam and Lee, 2006). The efficacy expectation was argued as "the conviction that one can successfully execute the behavior required to produce the outcomes" and outcome expectation was stated as "a person's estimate that a given behavior will lead to certain outcomes."

People may set different expectations for the same goal because of different individual's needs and different environments they encounter. Due to different efficacy expectation and personal experiences, people may have different responses to the outcome expectation. In a study measuring computer performance (Compeau and Higgins 1995), it was found that computer performance significantly influenced the outcome expectation in using computers. The behavior would also influence the emotional reactions.

Personal Involvement

There were two types of involvements defined in Faber et. al.'s study (1993): one was situational involvement and another was enduring (personal) involvement. Situational involvement reflected the temporary relevance of a specific topic with a short-term outcome, while enduring involvement showed a long-term interest in a product or topic. Zaichkowsky (1985) defined personal involvement as inherent interests, values, or needs which motivate a

person toward the object. Messages which contain a person’s needs may render higher level of personal involvement and thus change the person’s behavior.

RESEARCH METHODOLOGY

In this section, we first define the variables used in this study and then provide the research design.

Variable Definition

Table 1 summarized the operational definitions of variables used in this study.

Table 1. Operational Definition of Variables

Variable	Operational Definition	Reference
Perception of Information Richness	The sender’s perceived information richness when using a particular instant messenger	Daft et al. (1987)
Personal Involvement	The perceived inherent interests, values, or needs delivered in a message content	Zaichkowsky (1985)
Expectation of Immediate Reply	Sender’s expectation of receiver’s immediate reply on a particular instant messenger	Bandura (1977)
Emotional Neglect	Sender’s emotional neglect behavior once the read message is ignored by the receiver	

Research Design

A laboratory experiment methodology was used in order to answer the research questions. The subjects were the users of instant messengers. They were randomly assigned into one of the six groups with different levels of information richness and read functionality. Table 2 shows the group assignment in terms of information richness and read functionality. Regarding the information richness, subjects were assigned to use either video message or text message as the cue. The medium may or may not carry read functionality. The sender-receiver relationship was set to be either good friendship or normal friendship. Subjects were recruited online and then were randomly assigned to one of the six abovementioned groups. They first watched the introductory paragraph to get familiar with the context of study. In the context, the sender-receiver relationship, video versus text message, and read functionality were defined. After completing the task, survey questionnaires were distributed.

Table 2. Group assignment based on the information richness and read functionality of media

Group	1	2	3	4	5	6
Information Richness	Video Phone	Video Phone	Text Message	Text Message	Text Message	Text Message
Read Functionality	Yes	Yes	Yes	Yes	No	No
Relationship	Friendship	Normal	Friendship	Normal	Friendship	Normal

The first part of items in the questionnaire collect participants’ personal information and their experience using instant messaging software/applications. The second part of items measure the constructs used in the study. Construct items were measured using seven-point Likert scale, where 1 indicates strong disagreement and 7 indicates strong agreement. Most of the items in the questionnaire were developed by adopting measures previously validated in other studies. The questionnaire items and wording were pre-tested by 30 valid users. Minor modifications were made based on the feedbacks collected from the pretest.

RESULTS

Descriptive Statistics

We collected questionnaire responses online on the author’s hosted website. An invitation message was posted on some Facebook pages, discussion boards, groups in mobile instant messaging applications. Participants were randomly assigned to one of the six groups listed in Table 2. Each group included 60 participants. Among the collected 400 responses, 360 were complete and valid. 51.7% of the valid respondents were male and 48.3% were female. Their demographic information is listed in Table 3. Students represented the largest source and the most common education level was college and university. Over 80% of the respondents had more than three years of experience using instant messaging tools. 69% of the respondents spent between 30 minutes and three hours on the tools each day.

Table 3. Demographics

Measure	Category	Frequency	Percent (%)
Gender	Male	186	51.7
	Female	174	48.3
Age	Below 20	130	36.1
	21–25	158	43.9
	26 and Above	72	20
Occupation	Student	248	68.9
	Non-Student	112	31.1
Education	High school and Below	93	25.8
	College and university	210	58.4
	Graduate school	57	15.8
Experience	Below 3 Years	71	19.7
	3 Years and Above	289	80.3

Validity and Reliability analysis

Wortzel (1979) suggested that Cronbach's α of each construct should fall between 0.7 and 0.98. The four constructs in this study showed the values above 0.7 (listed in Table 4), indicating that reliability of constructs is secured. Validity of constructs was also assured because all factor loadings were above the recommended 0.5 threshold (Nunnally 1978).

Table 4. Results of Validity and Reliability Analysis

Construct	Item	Average	Standard Deviation	Cronbach's α	Factor Loading	Cumulative Extraction Sum of Squared Loadings
Information Richness	IR 1	4.928	2.627	0.702	0.691	63.20%
	IR 2				0.844	
	IR 3				0.838	
Expectation of Immediate Reply	EIR 1	4.345	2.744	0.832	0.814	74.92%
	EIR 2				0.898	
	EIR 3				0.883	
Personal Involvement	PI 1	5.322	1.445	0.788	0.871	80.32%
	PI 2				0.861	
	PI 3				0.781	
Emotional Neglect	EN 1	5.481	1.681	0.812	0.783	64.00%
	EN 2				0.778	
	EN 3				0.799	
	EN 4				0.838	

Correlation Analysis

Through Pearson correlation analysis, we found that Information Richness and Expectation of Immediate Reply were positively correlated with Personal Involvement. Personal Involvement was also positively related with Emotional Neglect. All significant relationships were found at 0.01 level. Table 5 shows the results of Pearson correlation analysis.

Table 5. Results of Pearson Correlation Analysis

	Information Richness	Expectation of Immediate Reply	Personal Involvement	Emotional Neglect
Information Richness	1			
Expectation of Immediate Reply	-0.014	1		
Personal Involvement	0.162 ***	0.146 ***	1	
Emotional Neglect	-0.050	0.060	0.296 ***	1

* P<0.1 , **P<0.05 , *** P<0.01

Hypotheses Testing

The research subjects were randomly put into one of the six experimental groups with different controls in terms of information richness of instant messenger, read functionality of instant messenger, and sender-receiver relationship. To answer the first three research questions, t tests were performed to determine the differences in the controls on sender's expectation on receiver's immediate reply. The level of information richness was operationalized by text message and video message. The hypotheses were listed in Table 6.

Table 6. Hypotheses

Question	Hypotheses
1	H0: Population mean expectation of immediate reply over a text message is the same as population mean expectation of immediate reply over a video message. Ha: Population mean expectation of immediate reply over a text message is different from population mean expectation of immediate reply over a video message.
2	H0: Population mean expectation of immediate reply over a message with read functionality is the same as population mean expectation of immediate reply over a message without read functionality. Ha: Population mean expectation of immediate reply over a message with read functionality is different from population mean expectation of immediate reply over a message without read functionality.
3	H0: Population mean expectation of immediate reply over a message sent between sender and recipient with good relationship is the same as population mean expectation of immediate reply over a message sent between sender and recipient with normal relationship. Ha: Population mean expectation of immediate reply over a message sent between sender and recipient with good relationship is different from population mean expectation of immediate reply over a message sent between sender and recipient with normal relationship.
4	H0: Population mean sender's emotional neglect behavior over a text message is the same as population mean sender's emotional neglect behavior over a video message. Ha: Population mean sender's emotional neglect behavior over a text message is different from population mean sender's emotional neglect behavior reply over a video message.
5	H0: Population mean sender's emotional neglect behavior over a message with read functionality is the same as population mean sender's emotional neglect behavior over a message without read functionality. Ha: Population mean sender's emotional neglect behavior over a message with read functionality is different from population mean sender's emotional neglect behavior over a message without read functionality.
6	H0: Population mean sender's emotional neglect behavior over a message sent between sender and recipient with good relationship is the same as population mean sender's emotional neglect behavior over a message sent between sender and recipient with normal relationship. Ha: Population mean sender's emotional neglect behavior over a message sent between sender and recipient with good relationship is different from population mean sender's emotional neglect behavior over a message sent between sender and recipient with normal relationship.
7	H0: Sender's expectation of immediate reply is correlated to sender's emotional neglect. Ha: Sender's expectation of immediate reply is not correlated to sender's emotional neglect.
8	H0: Personal involvement is correlated to sender's emotional neglect? Ha: Personal involvement is not correlated to sender's emotional neglect?

Our result ($t=9.77$, $df=265$, $p\text{-value}<0.01$) showed that information richness provided by video message and text message had different impact on sender's expectation on receiver's immediate reply. Video message generated higher expectation. We also found that read functionality of instant messenger produced different sender's expectation on receiver's immediate reply ($t=-6.92$, $df=270$, $p\text{-value}<0.01$). In addition, read functionality gave sender higher expectation on receiver's immediate reply. No matter the sender and receiver are good friends or not, the sender-receiver relationship did not generate different influence on sender's expectation on receiver's immediate reply ($t=0.60$, $df=358$, $p\text{-value}=0.5474$). Table 7 shows the results of the tests.

Table 7. t Test Results

Variable	Group	Sample Size	Mean	Standard Deviation	t Value	Sig.
Immediate Reply	Text message (low in Information Richness)	120	5.733	1.059	9.77	0.000***
	Video message (high in Information Richness)	240	4.525	1.194		
Immediate Reply	No read functionality	120	4.306	1.320	-6.92	0.000***
	Read functionality	240	5.239	1.146		
Immediate Reply	Good friendship	180	4.969	1.283	0.60	0.574
	No good friendship	180	4.887	1.285		
Emotional Neglect	Text message (low in Information Richness)	120	5.375	1.011	-1.381	0.169
	Video message (high in Information Richness)	240	5.533	1.047		
Emotional Neglect	No read functionality	120	5.515	1.100	0.439	0.661
	Read functionality	240	5.464	1.006		
Emotional Neglect	Good friendship	180	5.528	1.032	0.864	0.388
	No good friendship	180	5.433	1.042		

* $P<0.1$, ** $P<0.05$, *** $P<0.01$

Moreover, we also analyzed the difference on sender's emotional neglect based on the variations of information richness of instant messenger, read functionality of instant messenger, and sender-receiver relationship. At 0.05 level, we did not find any impact on sender's emotional neglect using either video message or text message (see results in Table 7). Also, read functionality did not differ sender's emotional neglect behavior. In addition, sender-receiver relationship did not generate different influence on sender's emotional neglect behavior.

Pearson correlation analysis (see Table 5) showed that there was no significant relationship between sender's expectation on receiver's immediate reply and sender's emotional neglect behavior. Regression analysis also demonstrated the same result at 0.05 level. The result showed that the emotional neglect behavior was not caused by expectation on receiver's immediate reply but other factors not examined in this study. While adding personal involvement into the regression analysis, we found that personal involvement was a significant factor influencing the emotional neglect behavior at the 0.01 level.

CONCLUSIONS

Our results showed that video message generated higher sender's expectation on receiver's immediate reply than text message. The finding supported that video message is a richer medium which provides higher level of interaction. It also implied that users of mobile instant messenger expected immediate reply when using richer format to communicate. Users may allow the receiver more time to reply when using low richness format such as text message. We also found that read functionality gave sender higher expectation on receiver's immediate reply. The result satisfied the motivation of this study. When using an instant messenger with read functionality, receiver needs to be aware that the sender expects to get the response after seeing the status of message turned to "read."

We did not find any influence, generated by the use of video or text message, read functionality, or sender-receiver relationship, on negative emotion due to the ignoring of read message. Our findings implied that using neither rich medium such as video message nor non-rich medium such as text message would generate negative emotional experience. Our results also showed that message receivers would not have negative emotion no matter who they talk to, neither to good friends nor normal friends. Although users may be worried about that receivers' negative emotion is due to the read functionality provided by mobile instant messengers, we did not find such impact due to the existence of read functionality. The level of sender-receiver friendship will not make a difference on the level of negative emotion. It was suggested that there was no connection between receiver's immediate reply and negative emotion. The negative emotion was affected by personal involvement and maybe other factors not included in this study. Future research may examine other factors influencing the emotional neglect behavior while using instant messenger. Table 8 summarized the results of the study.

Table 8. Summary of Findings

Question	Result
1. Does information richness of instant messenger have any impact on sender's expectation of immediate reply?	Yes
2. Does read functionality of instant messenger have any impact on sender's expectation of immediate reply?	Yes
3. Does sender-recipient relationship of instant messenger have any impact on sender's expectation of immediate reply?	No
4. Does information richness of instant messenger have any impact on sender's emotional neglect behavior?	No
5. Does read functionality of instant messenger have any impact on sender's emotional neglect behavior?	No
6. Does sender-recipient relationship of instant messenger have any impact on sender's emotional neglect behavior?	No
7. Does sender's expectation of immediate reply have any impact on sender's emotional neglect?	No
8. Does personal involvement have any impact on sender's emotional neglect?	Yes

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APPENDIX

Questionnaire

Construct	Item Code	Item
Information Richness	IR_1	Using the message delivery method, I feel that I can get real time information delivered.
	IR_2	Using the message delivery method, I feel that I can use non-textual cues such as body language, voice tones, and body movements to communicate.
	IR_3	Using the message delivery method, I feel that I can let the message recipient understand my personal feeling and emotion.
Expectation of Immediate Reply	EIR_1	After I finish asking my question, I feel the message recipient will get back to me right away.
	EIR_2	After I finish asking my question, I think the message recipient will reply to me immediately.
	EIR_3	After I finish asking my question, I believe the message recipient will answer my question quickly.
Personal Involvement	PI_1	I feel that the message content is important to me.
	PI_2	I feel that the message content is valuable.
	PI_3	I feel that the message content is related to me.
Emotional Neglect	EN_1	I feel angry because of the recipient's ignorance.
	EN_2	I am anxious because the recipient did not respond.
	EN_3	I feel I am ignored.
	EN_4	I feel I am being treated unfairly.