ASEAN Marketing Journal

Volume 8 | Number 2 Article 2

November 2021

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Recommended Citation

Gloria, Theresa Victory and Achyar, Adrian (2021) "Effects of Externalities and Flow on Perceived Usefulness, Satisfaction, and Loyalty in Mobile Instant Messaging Promotion," *ASEAN Marketing Journal*: Vol. 8 : No. 2 , Article 2.
DOI: 10.21002/amj.v8i2.9261
Available at: https://scholarhub.ui.ac.id/amj/vol8/iss2/2

Effects of Externalities and Flow on Perceived Usefulness, Satisfaction, and Loyalty in Mobile Instant Messaging Promotion

Theresa Victory Gloria[1] and Adrian Achyar[2]

At its introduction, instant messaging (IM) was predicted to facilitate communication between businesses and customers. Growing numbers of smartphones coupled with internet penetration then led to the development of mobile instant messaging (MIM). Some MIM provides a feature for businesses to communicate to customers, which enables businesses to send promotions and information directly to customers. For this to be effective, loyalty is crucial for continued MIM use, especially MIM that can be used as a promotional tool, or mobile instant messaging promotion (MIMP). This study focuses on the factors that affect loyalty and satisfaction in MIMP. The results suggest that loyalty is affected by satisfaction and perceived usefulness, satisfaction by perceived enjoyment and attention focus, and perceived usefulness by referent network size and attention focus. MIMP should increase the user referent network size by offering rewards for inviting contacts. Perceived enjoyment and attention focus can be strengthened by enhancing the user experience and offering additional features.

Keywords: mobile instant messaging, promotion, loyalty and satisfaction, flow experience, network externalities

Pesan Instan (IM) diramalkan dapat menengahi komunikasi perusahaan kepada pelanggan. Pertumbuhan ponsel yang diiringi oleh peningkatan penggunaan Internet membuat pesan instan di ponsel (MIM) menjadi muncul. Beberapa MIM menawarkan fasilitas untuk perusahaan dapat mengirimkan promosi dan informasi lainnya kepada pelanggan. Supaya fasilitas ini efektif, loyalitas sangat penting untuk keberlangsungan penggunaan MIM sebagai alat promosi (MIMP). Penelitian ini bertujuan mengetahui faktor-faktor yang mempengaruhi loyalitas dan kepuasan MIMP. Beberapa hasil penelitian yang diungkap adalah pertama, loyalitas dipengaruhi oleh kepuasan dan manfaat yang ditangkap oleh pengguna MIMP (perceived usefulness). Kedua, kepuasan dipengaruhi oleh kenikmatan yang dirasakan oleh pengguna (perceived enjoyment) dan fokus perhatian (attention focus). Ketiga, manfaat yang dirasakan dipengaruhi oleh banyaknya pengguna sekarang (referent network size) dan fokus perhatian. MIMP sebaiknya berusaha meningkatkan jumlah penggunanya dengan cara menawarkan imbalan untuk mengundang teman untuk bergabung. Kenikmatan yang dirasakan dan fokus perhatian dapat diperkuat dengan meningkatkan pengalaman yang dirasakan pelanggan dan menawarkan fasilitas-fasilitas baru.

Kata kunci : mobile instant messaging, promotion, loyalty and satisfaction, flow experience, network externalities

Introduction

At its introduction, instant messaging (IM) was predicted to facilitate communication between businesses and customers (Doyle, 2003). The low cost of using IM is one factor that induces the adoption and application of IM for marketing. IM also has an advantage over email in that IM can tell whether the recipient is online and available to respond.

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Doyle (2003) used Yahoo Messenger (YM) as a case study in his article when YM was one of the biggest IM networks, along with American Online Instant Messenger (AIM) and Microsoft's MSN (Petronzio, 2012), all of which ran on personal computers (PCs).

Growing numbers of smartphones coupled with fast internet penetration (Internet Live Stats, 2014) led to the development of mobile instant messaging (MIM), the IM for smartphones. Sales of smartphones jumped from 122 million units in 2007 to 968 million in 2013 (Statista, 2014), finally overtaking the sales of feature phones (Protalinski, 2013) and PCs (Taylor, 2012). In Southeast Asia alone, the growth of smartphones significantly increased internet access (Russel, 2013).

As Doyle (2003) predicted, some MIM provides a feature for businesses to communicate to customers (About the Official Accounts, n.d.; Plus Friend, n.d.). The feature enables businesses to send promotions and other information directly to customers. For this feature to be effective, loyalty is crucial for continued MIM use (Oghuma et al., 2015; Gan & Li, 2015), especially MIM that can be used as a promotional tool. Furthermore, some evidence suggests that network externalities (Craig et al., 2007; Lin & Bhattacherjee, 2008; Strader, Ramaswami, & Houle, 2007; Wang, Hsu, & Fang, 2005) and flow experience (Chen, Yen, Hung, & Huang, 2008; Zhou & Lu, 2011) are involved in MIM.

Research on IM in marketing and business is scarce. Most studies are published in journals of information technology (e.g., Dolev-Cohen & Barak, 2013; Kuber & Wright, 2013; Wang, Hsieh, & Song, 2012) and language psychology (e.g., Riordan, Markman, & Stewart, 2013) and in various fields such as education (e.g., Lam, 2009). Only a few articles have studied IM in the marketing and business fields (Newman, 2007; Shih & Fan, 2013; Song & Wang, 2011) and still fewer have studied MIM (Gan & Li, 2015; Oghuma et al., 2015; Zhou & Lu, 2011).

Furthermore, previous research on MIM has not studied MIM that featured a direct communication tool. One study only focused on factors that affect loyalty and satisfaction with MIM in general (Zhou & Lu, 2011). Others only focused on the motivators and inhibitors that affected continuous use intention (Gan & Li, 2015) and the factors that influenced intention to use MIM in general (Yoon, Jeong, & Rolland, 2015). Virtually no study has focused on MIM that has a feature for businesses to communicate directly to their customers. Thus, the objective of this study is to examine the factors that influence satisfaction and loyalty in MIM that features a tool for direct communication with customers.

Literature Review

In this part, the definitions of instant messaging, mobile instant messaging, and the focus of this article, mobile instant messaging that features direct communication tools, are discussed. Later, network externalities, flow experience, perceived usefulness, satisfaction, and loyalty are defined and the hypotheses are presented.

Instant Messaging

IM is a computer program that enables users to send text messages over the internet (Doyle, 2003). It detects whether users are online and lets them communicate with each other (AOL's instant messaging, 2000). Some of IM's basic functions, in addition to sending text messages, include maintaining availability status, maintaining profile and information, maintaining privacy, and using voice and video (Doyle, 2003).

Mobile Instant Messaging

Mobile instant messaging is an instant messaging service in mobile devices such as smartphones (Mobile Instant Messaging, n.d.). It allows users to use IM on a mobile device rather than a PC.

In the early 2000s, some IM providers released IM for mobile phones, such as Yahoo Messenger (Doyle, 2003). Eleven years later, in 2011, the number of MIM messages was estimated at 1.6 trillion and the estimate for 2012 was 2.2 trillion (Informa Telecoms & Media, n.d., in Mobile instant messaging, 2013). In 2014, the number of MIM messages was predicted to reach 50 billion (Short messaging services, 2014).

MIM advantages over other mobile text messaging services such as short message services (SMSs) are that MIM allows free-of-charge rapid response and conversing with multiple users while SMS is a more personal and paid service (Short messaging services, 2014). MIM also allows multimedia messages such as voice messages, videos, images, and animations, group chats, integration with a smartphone phone book, and other services (Mobile instant messaging, 2013).

The focus of this study is MIM that includes a direct communication tool as one of its features, which in this study is defined as mobile instant messaging promotion (MIMP) for the sake of convenience. This feature enables businesses to send promotional messages directly to their customers and to get rapid responses from their customers.

Network Externalities

Network externalities are conditions in which the increasing number of users of a product increases the product's value or utility to the users themselves, existing or potential (Katz & Shapiro, 1985). Network externalities are significant in the adoption of technologies and are present when many consumers purchase compatible items (Katz & Shapiro, 1986). Network externalities in telecommunications present when a group of subscribers exists if communication is to occur (Allen, 1988).

There are several sources of network externalities (Katz & Shapiro, 1985). First is the direct effect of the number of purchasers. For example, the utility derived by consumers who purchase telephones depends on the number of other consumers who have joined the telephone network. Second is the indirect effect of complementary products such as the number of software programs available for computers (Shurmer, 1993).

Network externalities have been studied in various industries of technology, including telecommunications (Allen, 1988; Baranes & Flochel, 2008; Baraldi, 2012; Blonski, 2002; Boardman & Hargreaves-Heap, 1999; Chu, Kao, & Liao, 2012; Gupta, Jain, & Sawhney, 1999; Hahn, 2003; Heinrich, 2014; Yannelis, 2001; Yannelis, 2002), e-commerce/e-business (Ehsani, Ghodsi, Khajenezhad, Mahini, & Nikzad, 2012; Hwang & Oh, 2009; Lu & Lin, 2012; Viswanathan, 2005; Xia & Shaw, 2007; Zhao, Lai, Wang, Hsieh, & Chen, 2007; Zodrow, 2003), and computer/information technologies (Chou & Shy, 1990; Church & Gandal, 1993; Tomak & Keskin, 2008; Tucker, 2008; Zhang & Seidmann, 2010).

Lin and Bhattacherjee (2008) redefined the concept of direct and indirect network externalities for MIM. Rather than the direct effect of total number of users who use a specific IM (Katz & Shapiro, 1985), the referent network size is defined as the number of people in users' social circle who already use the network. Indirect effects of network externalities include the actual availability of complementary products (Katz & Shapiro, 1985) and perceived complementarity of IM is users' belief or perception of the availability. Furthermore, the concept of network externalities influences perceived usefulness (Strader, Ramaswami, & Houle, 2007; Wang, Hsu, & Fang, 2005) and satisfaction (Gao & Bai, 2014; Zhou & Lu, 2011). Thus:

H1: Referent network size influences perceived usefulness.

H2: Referent network size influences satisfaction.

H3: Perceived complementarity influences perceived usefulness.

H4: Perceived complementarity influences satisfaction.

Also, network externalities affect perceived enjoyment (Zhou & Lu, 2011). A large referent network size means that users have more peers with whom to communicate and can build an intention to conduct group chat. This leads to more enjoyment. More additional features also affect perceived enjoyment. Thus:

H9: The referent network size influences perceived enjoyment.

H10: Perceived complementarity influences perceived enjoyment.

Flow Experience

The flow experience is a condition in which attention can be freely invested to achieve a goal (Csikszentmihalyi, 1991) or an intrinsically enjoyable experience (Privette, 1983). Flow implies not either (1) optimal condition of focused attention or (2) perceived enjoyment, but both attention focus and perceived enjoyment at the same time (Privette, 1983).

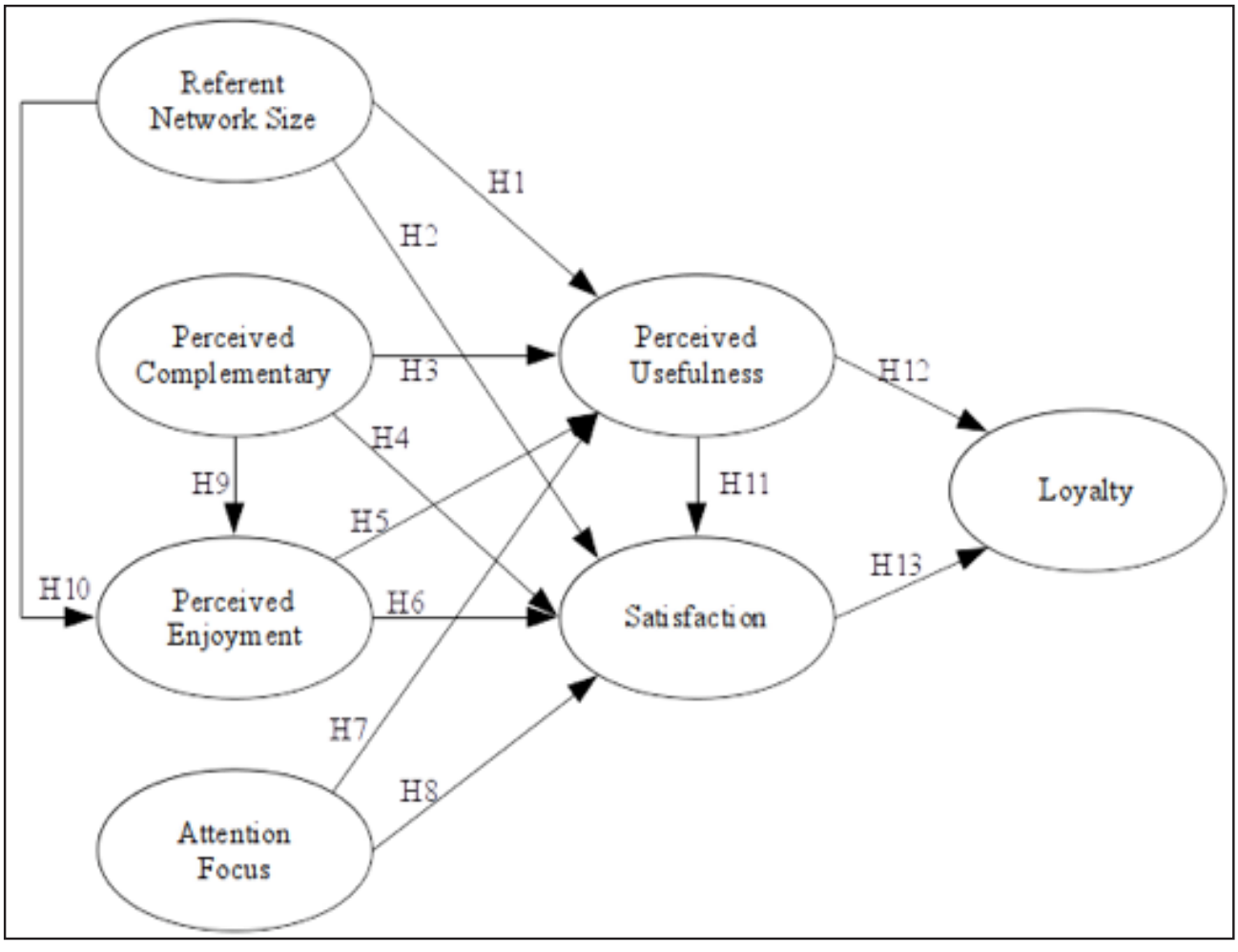


Figure 1. Research Model, adapted from Zhou & Lu (2011)

The flow experience has been explored across various areas of studies, such as information technology (Montgomery, Sharafi, & Hedman, 2004; Sharafi, Hedman, & Montgomery, 2006), websites (Chen, 2006; Dailey, 2004; Li & Browne, 2006), computer games (Chen, 2007; Hsu & Lu, 2004), online communities (Wu & Chang, 2005), online social media (Zhou, Li, & Liu, 2010), and e-commerce (Oh, Yoon, & Park, 2012). Also, like network externalities, the flow experience also influences perceived usefulness and satisfaction (Gao & Bai, 2014; Hsu, Wu, & Chen, 2013; Zhou, 2013; Zhou, 2014; Zhou & Lu, 2011). Thus:

H5: Perceived enjoyment influences perceived usefulness.

H6: Perceived enjoyment influences satisfaction.

H7: Attention focus influences perceived usefulness.

H8: Attention focus influences satisfaction.

Perceived Usefulness, Satisfaction, and Loyalty

Perceived usefulness relates to consumers' efficiency in living and working and their quality improvements that relate to using MIM (Zhou & Lu, 2011). It is the general perception of the efficiency of communication technology, MIMP in this case, to convey messages and information in a more general context (Lou, Chau, & Li, 2005), in contrast to Davis (1989), who defined usefulness of technology only in work settings.

Satisfaction is the difference between consumers' perceived performance of a product and their expectation (Oliver & Linda, 1981). This difference is either positive disconfirmation (the performance is higher or the same as the expectation, and thus the consumer is satisfied) or negative (dissatisfied). In mobile value-added services such as MIMP, satisfaction is consumers' total perception of the consumption of mobile services (Kuo, Wu, & Deng, 2009).

It is consumers' accumulated feelings toward MIMP that develop over multiple interactions with MIMP providers (Zhou & Lu, 2011).

Loyalty is a deeply held commitment to consistently repurchase products in the future despite situational factors and marketing efforts that have the potential to cause product switching (Oliver, 1999). Loyalty is not merely repeat purchase behavior but a commitment to specific brands (Jacoby & Kyner, 1973). In the communication technology industry, loyalty is defined as the intention for continual use of a communication product (Hsiao & Chang, 2014). Thus, in instant messaging, loyalty is defined as the intention to use the current instant messaging service (Hong, Lee, & Suh, 2013).

Satisfaction is also influenced by perceived usefulness (Li & Liu, 2014; Mäntymäki & Islam, 2014; Mohamed, et al., 2014; Zhou & Lu, 2011), and loyalty is influenced by perceived usefulness (Cyr, Head, & Ivanov, 2006; Hsu, Wu, & Chen, 2013) and satisfaction (Clemes, Shu, & Gan, 2014; Qi, Qu, & Zhou, 2014; Hsiao & Chang, 2014). Thus:

H11: Perceived usefulness influences satisfaction.

H12: Perceived usefulness influences loyalty.

H13: Satisfaction influences loyalty.

Figure 1 illustrates the research model.

In conclusion, instant messaging is a computer program that can be used to send text messages over the internet while mobile instant messaging is instant messaging for mobile phones. Mobile instant messaging promotion is mobile instant messaging that features direct communication tools. Network externalities are the conditions in which the increasing number of MIMPs increases the value or utility to users. This utility derives directly from the number of existing MIMP users and indirectly from the number of existing MIMP features. The flow experience of MIMP involves focused attention on using MIMP or enjoyment perceived by the user when using MIMP. Perceived usefulness is the efficiency in living and working experienced by users while using MIMP. Satisfaction is the accumulated feelings felt by MIMP users while loyalty is users' commitment or intention to use MIMP in the future.

Methods

LINE was chosen as the MIMP of this study for several reasons. First, it is one of the leading MIMs (Most popular global, n. d.). Second, LINE is one of the first MIMs to connect businesses to customers. Using the LINE Official Account feature, businesses can send promotions directly to customers (Introduction of LINE, 2012).

This study used a conclusive-descriptive research design. Samples of 30 respondents for the pilot test and 704 respondents for the main test were collected using online questionnaires. The number of respondents for the main test was adequate as the minimum number of respondents is 110, which comes from the number of observed variables (22 variables) multiplied by five (Baumgartner & Homburg, 1996, as cited in Vieira, 2011). This required minimum number of respondents was used because structural equation modeling was employed for data analysis in the main test.

The population of this study was people who downloaded and used LINE messenger on their Android or iPhone smartphones. Windows Phone and Blackberry users were not included because LINE features on these smartphones are not yet complete, and LINE for PCs was not included because it only has chat and call features.

Samples were drawn using a non-probabilistic method of convenience sampling from people who were using LINE on their smartphones. Respondents were recruited using social media such as Facebook and Twitter. First, some active users of Facebook and Twitter were asked to post a status or to tweet a message, asking their connections who used LINE to fill out an online, self-administered questionnaire whose link appeared within the posts. Their contacts who filled out the questionnaire then replied with the status or a tweet, informing that they had filled out the questionnaire. The online questionnaire was composed with Google Forms. The measurements in the questionnaire used 6-point Likert scales anchored by really disagree (1) and really agree (6). The operationalization of variables is presented in Appendix 3.

The pilot test was conducted to test the reliability and validity of the measurements. The Cronbach's alpha reliability test was used

Table 1. Validity and Reliability of the Measurements

Latent Variables	Cronbach's Alpha	KMO	Observed Variables	Factor Loadings
Referent Network Size	0.897	0.5	RNS1	0.953
			RNS2	0.953
Perceived Complementarity	0.774	0.626	PC1	0.909
			PC2	0.807
			PC3	0.797
Perceived Enjoyment	0.835	0.78	PE1	0.884
			PE2	0.860
			PE3	0.843
			PE4	0.732
Attention Focus	0.895	0.823	AF1	0.907
			AF2	0.896
			AF3	0.866
			AF4	0.831
Perceived Usefulness	0.738	0.663	PU1	0.844
			PU2	0.841
			PU3	0.745
Satisfaction	0.924	0.729	S1	0.956
			S2	0.938
			S3	0.901
Loyalty	0.775	0.579	L1	0.919
			L2	0.800
			L3	0.793

to analyze the reliability of the instruments and factor analysis was used to analyze the validity of the instruments. The main test data were analyzed with structural equation modeling (SEM). SEM was chosen for the analysis for several reasons (Vieira, 2011). The variables were latent variables, which means variables such as loyalty and satisfaction are not directly observable. Different from physical variables such as body weight and body height, one cannot observe a person's satisfaction with or loyalty toward a product by just looking at the person. Instead, satisfaction and loyalty are measured by a set of measurable indicators or manifest variables, which were the questions in the questionnaire. Another reason for using SEM was that one variable can act as both an independent and a dependent variable. For the example in Figure 1, the variable perceived enjoyment acts as an independent variable when it influences perceived usefulness and satisfaction while simultaneously acting as a dependent variable when it is influenced by referent network size. Because the variables were latent and could be both independent and dependent at the same time, SEM was used for the analysis.

Result and Discussion

Pilot Test Statistics

Reliability and validity of the measurements are presented in Table 1. The measurements are both reliable and valid. The values of Cronbach's alpha of the latent variables are above 0.6 (Malhotra, 2007). The values of the Barlett's test are significant, below 0.05, and KMO (Kaiser-Meyer-Olkin's samples of adequacy) and factor loadings are above 0.5.

Table 2. Measurement Model's Model Fit Indices

Goodness Of Fit Index	Target	Values
Root Mean Square Error of Approximation (RMSEA)	RMSEA ≤ 0.08	0.06
Tucker-Lewis Index or Non-Normed Fit (TLI or NNFI)	NNFI ≥ 0.90	0.95
Normal Fit Index (NFI)	NFI ≥ 0.90	0.94
Relative Fit Index (RFI)	RFI ≥ 0.90	0.93
Incremental Fit Index (IFI)	IFI ≥ 0.90	0.96
Comparative Fit Index	CFI ≥ 0.90	0.96

Table 3. T-Values of Measurement Model

Latent Variables	Observed Variables	T-Values
Referent Network Size	RNS1	18.75
	RNS2	21.7
Perceived Complementarity	PC1	12.31
	PC2	19.55
	PC3	19.79
Perceived Enjoyment	PE1	27.8
	PE2	26.39
	PE3	28.58
	PE4	28.38
Attention Focus	AF1	24.58
	AF2	26.8
	AF3	26.98
	AF4	26.94
Perceived Usefulness	PU1	28.67
	PU2	31.46
	PU3	25.81
Satisfaction	S1	29.48
	S2	33.34
	S3	30.09
Loyalty	L1	24.8
	L2	24.9
	L3	24.14

Respondents Profiles

About 70% of the respondents were women and 81% had a bachelor's degree. They had varied monthly spending ranging from Rp 700,000 to Rp 1,000,000 (about 29%), below Rp 700,000 (about 25%), and between Rp 1,000,000 to Rp 1,500,000 (about 22%). The respondents' age was 20 years old on average while 95% were between 19 and 20 years old. The youngest respondent was 19 years old while the oldest was 56.

Most of the respondents knew LINE from family and friends (about 61%) and from LINE advertising on television or radio (about 25%). In addition to chatting, most used LINE to make free calls (about 32%), play LINE games (about 23%), and use the LINE Personal Home Page

Table 4. Structural Model's Model Fit Indices

Goodness Of Fit Index	Target	Values
Root Mean Square Error of Approximation (RMSEA)	RMSEA ≤ 0.08	0.073
Tucker-Lewis Index or Non-Normed Fit (TLI or NNFI)	NNFI ≥ 0.90	0.93
Normal Fit Index (NFI)	NFI ≥ 0.90	0.92
Relative Fit Index (RFI)	RFI ≥ 0.90	0.91
Incremental Fit Index (IFI)	IFI ≥ 0.90	0.94
Comparative Fit Index	CFI ≥ 0.90	0.94

Table 5. T-Values of the Paths and Hypotheses Tests

Paths	T-values	Hypotheses	Conclusions	Zhou & Lu (2011)
Referent Network Size → Perceived Usefulness	8.75	H1	H1 accepted	H1 accepted
Referent Network Size → Satisfaction	0.95	H2	H2 rejected	H2 rejected
Perceived Complementarity → Perceived Usefulness	0.11	H3	H3 rejected	H3 accepted
Perceived Complementarity → Satisfaction	0.37	H4	H4 rejected	H4 accepted
Perceived Enjoyment → Perceived Usefulness	0.94	H5	H5 rejected	H5 accepted
Perceived Enjoyment → Satisfaction	9.35	H6	H6 accepted	H6 accepted
Attention Focus→ Perceived Usefulness	5.55	H7	H7 accepted	H7 accepted
Attention Focus → Satisfaction	3.59	H8	H8 accepted	H8 rejected
Referent Network Size → Perceived Enjoyment	4.15	H9	H9 accepted	H9 rejected
Perceived Complementarity → Perceived Enjoyment	15.45	H10	H10 accepted	H10 accepted
Perceived Usefulness → Satisfaction	6.79	H11	H11 accepted	H11 accepted
Perceived Usefulness → Loyalty	5.51	H12	H12 accepted	H12 accepted
Satisfaction → Loyalty	16.77	H13	H13 accepted	H13 accepted

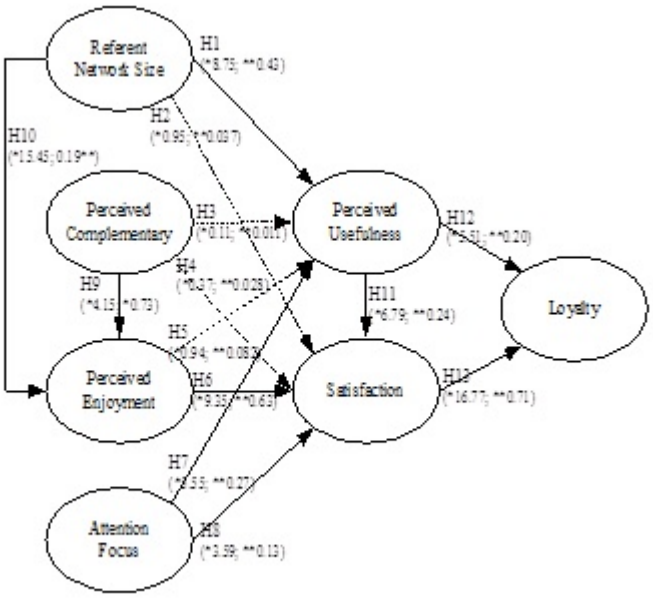
(about 22%). They used LINE for about four hours a day on average, and 95% used LINE about three to four hours a day. More detailed information on the demographics and usage behavior is available in the appendices.

Measurement Model

The test of validity in the measurement model was conducted with confirmatory factor analysis of the structural equation modeling. The goodness-of-fit indices of the measurement model are adequate (Table 2), and the t-values of all observed variables are significant (Table 3) at the 5% level in the two-tailed test (t-values < -1.96 or > 1.96).

Structural Model

The model fit of the structural model is also adequate (Table 4). T-values of the paths, relevant hypotheses, and their



Notes: *T-values; **standardized loading factors; dashed lines represent rejected hypotheses

Figure 2. Hypotheses, Standardized Loading Factors, and T-values

comparisons with Zhou and Lu (2011) are presented in Table 5, and the research model and hypotheses are visualized in Figures 1 and 2. Hypotheses 2 through 5 are rejected because their t-values are not significant at the 5% level of the two-tailed test (between -1.96 and +1.96), and hypotheses 8 and 9 as well as hypothesis 1 are accepted because their t-values are significant.

The results show that of the four variables, only referent network size and attention focus affect perceived usefulness in MIMP. The influence of referent network size means that LINE users' perception of the usefulness of LINE depends on the number of existing users. This result is similar to previous studies (Lou, Chau, & Li, 2005; Oghuma et al., 2015; Yoon, Jeong, & Rolland, 2015; Zhou & Lu, 2011) in which people perceive MIM as useful when it enables them to connect to their friends and family. Also, the undivided attention that is felt by users when using LINE influences users' perception of LINE utility. People who gain usefulness from LINE are those who experience focal, undivided attention when using LINE. This is also similar to Zhou and Lu (2011).

On the other hand, contrary to previous findings (Lou, Chau, & Li, 2005; Song & Wang, 2011; Wang, Hsieh, & Song, 2012; Wang, Ngai, & Wei, 2012; Zhou & Lu, 2011), perceived usefulness is not affected by perceived complementarity or perceived enjoyment in MIMP. People who use LINE do not derive usefulness or enjoyment from additional features when using LINE. This is consistent with Sabir, Ahmad, and Noor (2013), who reported that perceived enjoyment actually negatively influences perceived usefulness.

Furthermore, perceived enjoyment affects user satisfaction and perceived usefulness (Oghuma et al., 2015; Wang, Hsieh, & Song, 2012; Wang, Ngai, & Wei, 2012; Zhou & Lu, 2011). Users who are satisfied with LINE are those who enjoy using it and consider it useful in their work and life. Also, their satisfaction is derived from their focal attention when using LINE.

However, different from Zhou and Lu (2011), satisfaction is not affected by referent network size or perceived complementarity. The number of existing users does not increase user satisfaction. Also, increasing numbers of features do not increase user satisfaction. This is similar to social network sites (Gao & Bai, 2014), where referent network size and perceived complementary do not affect satisfaction.

Similar to previous studies (Lou, Chau, & Li, 2005; Song & Wang, 2011; Yoon, Jeong, & Rolland, 2015; Zhou & Lu, 2011), perceived enjoyment is positively affected by both referent network size and perceived complementarity. The enjoyment felt by LINE users comes from the number of existing LINE users. This makes sense because the more people use LINE, the more people can interact with each other, thus creating enjoyment. The enjoyment also comes from the number of existing features on LINE. Adding more features to LINE will result in increasing enjoyment felt by its users.

Last, loyalty of MIMP users is positively affected by perceived usefulness and satisfaction (Oghuma et al., 2015; Wang, Ngai, & Wei, 2012; Yoon, Jeong, & Rolland, 2015; Zhou & Lu, 2011). Loyal LINE users perceive LINE as useful in their work and life. Loyal users are also satisfied with LINE. This is similar to previous studies reporting that loyalties or continuous use of MIM is affected by perceived usefulness of the MIM and user satisfaction.

Observing the standardized loading factors (SLF) (Figure 2) reveals some points on the strength of relationships among the variables. Loyalty is more affected by satisfaction than perceived usefulness due to a higher SLF of satisfaction (0.71) than of perceived usefulness (0.20). Satisfaction, on the other hand, is more influenced by perceived enjoyment than by perceived usefulness and attention focus. Last, perceived enjoyment is more affected by perceived complementarity than by referent network size.

The difference in the findings between this study and that of Zhou and Lu (2011) might stem from the difference in the objects studied. This study focuses on MIMP while Zhou and Lu (2011) focused on MIM in general. The respondents in Zhou and Lu's (2011) study are mostly university students (56.1%) and male (60.5%), having been recruited on a campus and in a couple of service halls.

Conclusions

This study examines the effect of flow and network externalities on perceived usefulness and satisfaction and the effect of perceived usefulness and satisfaction on loyalty to MIMP. The results show that loyalty is affected by perceived usefulness while perceived usefulness is affected only by referent network size and attention focus. Loyalty is also affected by satisfaction, which in turn is affected by perceived usefulness, perceived enjoyment, and attention focus. These results have practical and theoretical implications.

These results imply that MIMP users who consider that MIMP has great usefulness already have many contacts that use MIMP. The implication of this finding is that MIMP developers can increase the number of users by triggering users' intention to recommend MIMP to their friends and relatives. This can be accomplished by offering rewards. Using LINE as an example, LINE Coins can be used as a reward for LINE users who recommend LINE to potential users. LINE users can use their Coins to buy premium contents such as stickers, themes, and other LINE products.

Other MIM companies such as Kakaotalk, Wechat, and Whatsapp can also improve their users' intention to recommend by offering rewards. Kakaotalk and Wechat offer paid stickers and themes but do not have Coins like Line, so it can offer free stickers or themes for users who recommend non-users to join Kakaotalk or Wechat. Whatsapp, on the other hand, does not have premium emoticons, stickers, or themes. Instead, it has premium or paid accounts. Whatsapp can use Google Wallet gift cards (Your gift cards, n. d.) to compensate users who recommend Whatsapp to non-users. Users can later use these gift cards to pay for Whatsapp accounts.

Users who consider MIMP to have great utility have high attention focus when using MIMP. This focus can be strengthened by enhancing the MIMP user experience. LINE accomplished this by creating stickers and themes that can be used in chatting. Kakaotalk and Wechat already have numerous stickers and themes, but Whatsapp has yet to add more emoticons and themes. The growing demand for additional emoticons in Whatsapp is currently realized by third-party apps such as Animated Smileys for Whatsapp (2015). Whatsapp can use integrated custom emoticons and themes like LINE, Kakaotalk, and Wechat.

Users who derive high enjoyment in using MIMP have contacts that are already users of MIMP and perceive that MIMP has many additional features. They enjoy using MIMP because many of their friends and relatives use it, and the larger the number of additional

features on MIMP the larger their enjoyment. LINE already has various features in addition to chatting, such as games and free calls, and the number of features increases with every update. Thus, MIMP developers need to communicate additional features with every release and update. MIMP developers also need to create better notifications about new features. LINE uses only a red letter N for notifications of new features. Perhaps MIMP developers such as LINE can develop interactive tutorials for every new feature release. This feature can also be used by other MIM providers such as Whatsapp, Kakaotalk, and Wechat. Kakaotalk and Wechat also employ a red letter N for new features notifications and also do not create interactive tutorials. Whatsapp, on the other hand, has fewer features than LINE, Wechat, and Kakaotalk. Whatsapp only has group chat and internet calls while the others have various features. Whatsapp can benefit from adding new features, following LINE, Wechat, and Kakaotalk.

The impact of these findings on promotion strategy is that MIMP can be utilized as one advertising medium; MIMP can be both a direct marketing and a public relations tool. In LINE, this can be achieved by using LINE Official Accounts (LOAs). LOAs act like normal LINE accounts but they officially represent brands, organizations, or even celebrities. For users to send or receive messages to and from LOAs, they have to add the LOAs to their friends list. Brands or companies can use LOAs to advertise directly to LINE users, and users can immediately respond. Companies can also direct their public relations efforts with MIMP. Every dispute or complaint about a product or brand goes directly to the people in charge of the product, and the response can be immediately directed to the relevant customer. Kakaotalk and Wechat have features that are similar to LOAs: Plus Friend in Kakaotalk (Plus Friend, n.d.) and Moments on Wechat (Features, n.d.). Companies can also use Plus Friend to advertise and directly communicate with their customers just like LINE LOAs. However, Kakaotalk Plus Friend offers more utility than LINE LOAs because Plus Friend allows companies to provide e-vouchers directly to their customers. Wechat Moments, on the other hand, can be used by all Wechat users to share statuses and updates with their friends. However, this feature is limited and does not enable companies to send e-vouchers.

In line with the results of this study, the key to loyalty among MIMP users is in the MIMP's perceived usefulness and users' satisfaction. The key to perceived usefulness is the referent network size and attention focus, and satisfaction involves perceived enjoyment and attention focus. This information can be used in various MIMs such as LINE, Kakaotalk, Wechat, and Whatsapp.

In LINE, Wechat, and Kakaotalk, this information can be immediately applied using LINE LOAs, Kakaotalk Plus Friend, and Wechat Moments, but not so in Whatsapp. Direct marketing efforts in LOAs, Plus Friend, and Moments can be targeted to increase referent network size by, for example, enticing users to comment in homepages and recommending the features to their friends. To increase attention focus, attractive and up-to-date information regarding companies' products can be used. Last, to increase perceived enjoyment, attractive graphics and funny, customized emoticons/stickers can be used in messages and homepages. However, although customized emoticons can be utilized by Whatsapp, it does not have a feature similar to LOAs, Plus Friend, and Moments, so direct marketing efforts in Whatsapp cannot be pursued.

The results also have theoretical implications. The finding that loyalty is more affected by satisfaction than perceived usefulness differs from Zhou and Lu (2011), who reported that loyalty is more affected by perceived usefulness. This provides evidence that satisfaction is still a primary key to loyalty in that satisfaction is a priority in achieving loyalty. This is similar to the findings of Oghuma et al. (2015) and Wang, Ngai, and Wei (2012). However, the results suggest that satisfaction is only affected by the flow experience, not by network externalities. This is the first evidence that network externalities do not affect satisfaction, especially in the technology industry.

This study is one of the first attempts to investigate MIM that can be used as a promotional tool for businesses. Limitations of this study are that only LINE is used as the object of the study. Also, benefits that users actually obtain from official accounts are not established. Future studies can explore user reactions to promotional activities in MIMP.

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Appendix

Appendix 1: Respondents' Profile

Sex

Sex	Frequency	Percentage
Male	210	29.83%
Female	494	70.17%
Total	**704**	**100.00%**

Education Level

Education Levels	Frequency	Percentage
Junior High School	2	0.28%
High School	69	9.80%
Diploma	49	6.96%
Undergraduate	573	81.39%
Master	10	1.42%
Doctoral	1	0.14%
Total	**704**	**100.00%**

Monthly Spending

Monthly Spending	Frequency	Percentage
Below Rp700,000	181	25.71%
Rp 700,000 – Rp 1,000,000	209	29.69%
Rp 1,000,000 – Rp 1,500,000	158	22.44%
Rp 1,500,000 – Rp 2,000,000	96	13.64%
Rp 2,000,000 – Rp 3,000,000	40	5.68%
More than Rp 3,000,000	20	2.84%
Total	**704**	**100.00%**

Age

Criteria	Statistic
Mean	20.13
Median	20
95% confidence interval for the mean: upper bound	19.95
95% confidence interval for the mean: lower bound	20.29
Minimum	13
Maximum	56

Appendix 2: Respondents' Behaviors

Knowing LINE From

Sources of Information	Frequency	Percentage
Recommendation from friends, family, or relatives	435	61.79%
LINE Ads in TV or radio	177	25.14%
The opinions of brand ambassadors in social media	53	7.53%
Information in Google Play Store or Apple App Store	32	4.55%
The Internet or websites	4	0.57%
Pre-installed in respondents' smartphones	3	0.43%
Total	**704**	**100.00%**

Frequently used features beside chatting

Features	Frequency	Percentage
Games	167	23.72%
Free calls	230	32.67%
LINE Personal Home Page	156	22.16%
LINE Apps	51	7.24%
Only Chatting	65	9.23%
Others (photo sharing, purchasing stickers, News, LINE Shopping, data transaction, and voice message)	35	4.97%
Total	**704**	**100.00%**

Average LINE usage in a day (hours)

Criteria	Statistic
Mean	4.16
Median	3
95% confidence interval for the mean: upper bound	3.85
95% confidence interval for the mean: lower bound	4.47
Minimum	0.08 hour (4.8 minutes)
Maximum	24

Appendix 3: Operationalization of the Variables

Latent Variables	Original (Indonesian)	English
Referent Network Size	RNS1: Kebanyakan dari teman sekelas/ sekampus/sekerja saya menggunakan LINE messenger	Most of my colleges (in campus or in work) are using LINE messenger
	RNS2: Kebanyakan dari teman dekat saya menggunakan LINE messenger	Most of my close friends are using LINE messenger
Perceived Complementarity	PC1: Terdapat banyak pilihan games yang dapat diakses dari LINE messenger	There is a wide range of games available on LINE messenger
	PC2: Terdapat banyak pilihan emoticon yang tersedia dalam LINE messenger	There is a wide range of emoticons available on LINE messenger
	PC3: Terdapat banyak fitur pada LINE messenger (seperti free call, Video Call, Photo Sharing, dll)	There is a wide range of features available on LINE messenger (such as video call, photo sharing, etc.)
Perceived Enjoyment	PE1: Saya merasa senang saat menggunakan aplikasi/fitur dari LINE messenger	Using LINE messenger or its features is fun
	PE2: Saya merasa semangat saat menggunakan aplikasi/fitur dari LINE messenger	Using LINE messenger or its features is exiting
	PE3: Menurut saya, penggunaan aplikasi/fitur LINE messenger ini merupakan sesuatu yang dapat dinikmati	LINE messenger or its features are enjoyable
	PE4: Menurut saya, penggunaan aplikasi/fitur LINE messenger ini merupakan sesuatu yang menarik	LINE messenger or its features are interesting
Attention Focus	AF1: Saat menggunakan aplikasi/fitur dari LINE messenger, saya merasa terpikat secara intens dalam aktivitas tersebut	When using LINE messenger, I was absorbed intensely in the Activity
	AF2: Saat menggunakan aplikasi/fitur dari LINE messenger, perhatian saya fokus pada aktivitas tersebut	When using LINE messenger, my attention was focused on the activity
	AF3: Saat menggunakan aplikasi/ fitur dari LINE messenger, saya berkonsentrasi penuh	When using LINE messenger, I concentrated fully on the activity
	AF4: Saat menggunakan aplikasi/fitur dari LINE messenger, saya merasa keasyikan	When using LINE messenger, I was deeply engrossed in the activity

Perceived Usefulness	PU1: Penggunaan LINE messenger ini dapat membantu saya meningkatkan kualitas hidup/pekerjaan saya	Using LINE messenger can improve my life or work quality
	PU2: Dengan menggunakan LINE messenger, saya dapat meningkatkan tingkat efisiensi hidup/pekerjaan saya	Using LINE messenger can improve my life or work efficiency
	PU3: LINE messenger berguna untuk hidup atau pekerjaan saya	LINE messenger is useful to my life or work
Satisfaction	KK1: Secara keseluruhan, saya merasa puas dengan penggunaan LINE messenger	Generally, I am satisfied with LINE messenger
	KK2: Secara keseluruhan, saya merasa senang dengan penggunaan LINE messenger	I am contented with LINE messenger.
	KK3: Secara keseluruhan, saya merasa gembira dengan penggunaan LINE messenger	I am pleased with LINE messenger
Loyalty	LOY1 : Saya akan terus menggunakan LINE messenger	I will continue to use LINE messenger
	LOY2 : Saya akan merekomendasikan LINE messenger kepada orang lain	I will recommend LINE messenger
	LOY3 : Saya akan memilih LINE messenger sebagai pilihan utama untuk melakukan chatting	I will consider LINE messenger as my first choice when conducting mobile chat