

Importance Factors Influencing the Thai Doctors in Rural Area to Use Public Social Media for Work-Related Use: A Case Study of LINE Application

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ABSTRACT

The inefficient distribution of doctors in rural areas is the issued need to be achieved. Many doctors in rural hospitals which are new graduated and lack of experience are unable to diagnose and treat all types of illnesses, and need collaboration with urban-based medical specialties. Meanwhile, public social media has become a major role of daily life, it can enable real-time interaction, collaboration, implicit knowledge sharing with facilitate from Social Capital. This study purposes to examine the importance factors influencing the Thai doctors in rural area intention to use public social media for work-related use by using social capital theory assessment integrated with UTAUT model. This research model is empirically using survey data from 148 participants of the doctors in rural areas. All of six research hypotheses were positively significant supported. The results indicated that; Performance Expectancy is the most associated factor with using LINE application for social-related use and then social-related use can enable work-related use through Social capital. Meanwhile, the study suggests that the doctors can use LINE application as work-related use for real-time interaction, collaboration and knowledge sharing with others.

Keywords: Tacit knowledge sharing, Social Capital, Work-Related Use, UTAUT Model, LINE Application, Public Social Media.

I INTRODUCTION

The critical shortage of doctors in many countries is the worldwide issue that needs to be achieved (World Health Organization, 2006). In Thailand, the inefficient distribution of doctors in rural areas has a major impact on access to healthcare for those living in rural communities especially specialists are tend to cluster in metropolitan areas (Pagaiya, Kongkam, & Sriratana, 2015; Wacharasint, 2014). Then rural hospitals which are primary care center provide lower quality healthcare services because of the lack of experienced doctors who generally unable to diagnose and treat all types of illnesses (Simmons, 2010). With low doctors densities and lack of experienced doctors lead to the difficulty of access to intensive care services for critically ill patients living in the

rural areas (Wacharasint, 2014). So this means rural hospitals have to transfer some critically ill patients to other hospitals with appropriate facilities and experienced specialists for diagnosis and treatment which are costly and time-consuming (Al-Safadi, 2016). To overcome this problem, many researches aim to enable doctors in the rural areas to collaborate urban-based medical specialties such as presenting a real-time traffic information-based emergency medical service (RTIEMS) system by providing ECG signals, temperature, oxygen, and pulse wirelessly transmitted to server located in the hospital emergency room (Tan et al., 2012), Prasad et al. (2010) provided a tool for doctors to view medical images online and collaborate over the Internet and introduced a telemedicine platform that supports a real-time, ubiquitous, collaborative, and interactive meeting environment equipped with 3D visualization facilities (Maani et al., 2009). The collaboration between doctors in rural areas and specialties is in form of sharing practical, experience knowledge and decision making (Kothari et al., 2012) which is implicit knowledge sharing because critically ill patients need diagnosis and treatment accurately and quickly. With the advent of public social media, it can facilitate implicit and experiential knowledge sharing among experts sharing, particularly where experts are not always geographically co-located, through free-form, real-time, interactive and collaborative technologies, such as social networking and online discussion forums (Abidi et al., 2009).

This study purposes to examine the importance factors influencing the Thai doctors in rural area intention to use public social media for work-related use by using social capital theory assessment integrated with UTAUT model. The result will reveal the entire factors that influenced the Thai doctor intention to use LINE application through social capital which affect to work-related purposes. The survey research methodology is described and the results presented, followed by discussion, conclusion and further work.

II LITERATURE REVIEW

Nowadays, public social media has become a major role with our daily life which has capabilities to enable user for co-creation the content, provide effective real-time communication in forms of chatting, video conferencing, and encourage building a knowledge

community though discussion about interest issues gather together in online space (Panahi, Watson & Partridge, 2012). From Thailand internet user survey in 2015 indicated that the most popular public social media are Facebook (92.1%) and Line (85.1%) which have common features to enable people chatting/message, share image, audio and video etc. Although Facebook is the most popular public social media but LINE application has the highest growth rate by 23% (Electronic Transactions Development Agency, 2016; Thailand Zocial Award, 2015). From the capabilities of public social media, people are able to meet and communicate with friends to obtain a sense of belongingness and to develop relationships, individuals accumulate their social capital as a consequence of daily social interactions, but it is also feasible to make intentional investments in social interaction (Cao et al., 2012).

Currently, the rapid growth of public social media make our daily life more convenient and occur new opportunities for many businesses. In the organization aspect, several organizations tried to explore how to use public social media to improve work effectiveness but they may be hesitant regarding using public social media within organization may interfere with employee's work (Sun & Shang, 2014). But several studies revealed that public social media can improve work effectiveness, Leftheriotis & Giannakos (2014) found that public social media can improve employees' work effectiveness more than losing time, employees use public social media to find new customers, recruit personnel, keep contact with customer and watch market or competitors. Consistent to Leonardi, Huysman, & Steinfield (2013) proposed that many organizations have employed intraorganizational social media to enable employees to share files and digital resources and connect with or follow partners.

In the medical field, there are studies about using social media within physician, Bosslet, Torke, Hickman, Terry, & Helft (2011) studied about the use of online social media for patient interaction among medical students (MS), resident physicians (RS) and practicing physicians (PP), the result shows that all three kind of physicians use online social media for patient interaction which practicing physicians use it at the most.

Social capital, a set of resources embedded within an individual or organization relationships, is valuable for both individual and organization participants. In this study, we focus on all three dimensions of social capital as structural, relational and cognitive dimension. Social capital has been a critical factor for successfully use public social media because it enables facilitating interactions, cooperation, knowledge acquisition, and sharing among people (Sun & Shang,

2014; Lin, 2011; Putnam, 1995). The continuance use of public social media can strengthen their social capital building due to the potential for interaction and communication among people (Jin, 2013).

Several previous studies revealed that social capital has results in benefits for organization, (Peng, Fang, & Lim, 2011) reveals that social capital encourages user acceptance of numerous IS used in organizations, Zhongju Zhang (2010) indicated that group members with a clear, shared vision exhibit greater team orientation, which exerts a direct influence on users' system use. Furthermore, Hau, Kim, Lee, & Kim, (2013) revealed that social capital acts as a motivational factor in knowledge sharing intention, self-related expertise, and tenure. The result is related to Cao et al. (2012) found that social media can enhance trust among employees and leading to transfer implicit knowledge which is more effective than explicit knowledge.

Hanson et al. (2011) studied about adoption of social media among health educators based on UTAUT model and found that supporting from organization or supervisor (social influence) and perform better at work (Performance Expectancy) are the key factors which are influenced their acceptance. Social capital is purposed as one of the key factor for successfully use social media for work-related use in this study.

From related literature showed that the consistent of benefit between social media and social capital can improve work effectiveness by facilitating cooperation, knowledge transfer and knowledge absorption. Then they can enable implicit knowledge sharing among experts which related to this study.

III RESEARCH MODEL

To study the importance factors influencing the Thai doctors in rural area to use public social media for work-related use: LINE application, the research proposes six hypotheses based on the factors in UTAUT model and social capital theory (Sun & Shang, 2014; Lin, 2011; Putnam, 1995). In this study, we had eliminated some variables: age, gender, experience and voluntariness as shown in Figure 1.

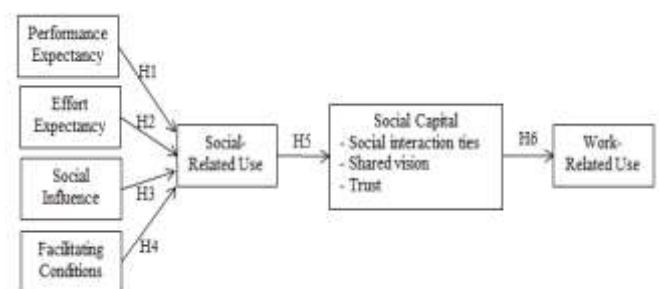


Figure 1. Research Model.

A. Performance Expectancy [PE]

Performance Expectancy is defined as the degree to which an individual believes that using the system will help him or her to attain gains in job performance (Venkatesh et al, 2003). In this study, Performance Expectancy is meant that doctors believe that using LINE application has benefits for their social activities such as increasing the chances to communication with others and access to information easier. We propose the following hypothesis:

H1: Performance Expectancy (PE) is positively related to the Thai doctors in rural area using LINE application for social-related use (SRU).

B. Effort Expectancy [EE]

Effort Expectancy is defined as the degree of ease associated with the use of the system (Venkatesh et al, 2003). In this study, Effort Expectancy is meant that doctors feel that LINE application is easy to use such as user friendly interface, easy to learn to use. We propose the following hypothesis:

H2: Effort Expectancy (EE) is positively related to the Thai doctors in rural area using LINE application for social-related use (SRU).

C. Social Influence [SI]

Social Influence is defined as the degree to which an Individual perceives that important others believe he or she should use the new system (Venkatesh et al, 2003). In this study, Social Influence is meant that the opinions from colleagues and supervisors effects using LINE application for social activities of doctors. We propose the following hypothesis:

H3: Social Influence (SI) is positively related to the Thai doctors in rural area using LINE application for social-related use (SRU).

D. Facilitating Conditions [FC]

Facilitating Conditions are defined as the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system (Venkatesh et al, 2003). In this study, Facilitating Conditions is meant that doctors will use LINE application for social activities when they have adequate resources such as mobile phone and internet, supporters when they face the issues while using. We propose the following hypothesis:

H4: Facilitating Conditions (FC) is positively related to the Thai doctors in rural area using LINE application for social-related use (SRU).

E. Social Capital [SCP]

In this study, we focus on all three dimensions of social capital as structural, relational and cognitive dimension (Sun & Shang, 2014; Lin, 2011; Putnam,

1995). Using LINE application for social activities among doctors will create or maintain relationship among them and the development of social interaction. When doctors interact with each other over time, it will develop a concrete knowledge of each other and likely to develop trust in other doctors. And doctors also perceive shared vision through social interaction such as sharing information, resources and organizational vision. We propose the following hypothesis:

H5: Thai doctors in rural area to using LINE application for social-related use (SRU) positively affect to social capital (SCP).

F. Work-Related Use [WRU]

When doctors have highly shared vision can avoid the misunderstanding opportunities to exchange ideas or resources freely and also when trust is exists, the opportunities to sharing information and collaboration will be increased for work-related use (Sun & Shang, 2014). We propose the following hypothesis

H6: Social capital (SCP) of the Thai doctors in rural area using LINE application positively affects to work-related use (WRU).

IV RESEARCH METHODOLOGY

A. Questionnaire

We use questionnaire to estimate research model by reviewing theory and related research which are Venkatesh et al (2003) about UTAUT model and Sun & Shang (2014). The questionnaire consists of two sections. Firstly, the demographic of respondents were asked. Secondly, respondents were asked about the attitude about acceptance and intention to use LINE for work-related use. The questionnaire is constructed with the 5-point likert scale (1-Strongly disagree 2-Disagree 3-Neutral 4-Agree 5-Strongly agree) as shown in table 1. Because this research was conducted in Thailand and the population were Thai doctors, so the questionnaire from the original version proposed by Venkatesh et al (2003) and Sun & Shang (2014) was translated into Thai language to clearly understand.

To test the reliability, we conducted a preliminary analysis using pilot test from 30 samples. We used Cronbach's alpha coefficient as a measure which should be greater than 0.7 for acceptable internal consistency. As a result, the Cronbach's alpha is 0.840 which indicates a high level of internal and all constructs are acceptable which is greater than 0.7.

To analyze the relationship between factors influencing the Thai doctors in rural area to use public social media for work-related use, we conducted a

linear regression using Statistical Package for the Social Science: SPSS Version 22.

B. Participants

The sample size for this study is calculated based on the principle of Yamane (Yamane, 1973). A total of 420 questionnaires are distributed to the sample group which is Thai doctors in northeast of Thailand including Sakon Nakhon, Udonthani, Nong Khai, Loei, Nong Bua Lamph, Maha Sarakham and Khon Kaen Province. But total of 148 valid responses were collected as a valid response rate of 35% as shown in Table 1.

Table 1. Description of sample.

Attribute	Value	N	Percent
Gender	male	71	47.97
	female	77	52.03
Age(years)	20-25	29	19.59
	26-30	51	34.46
	31-40	30	20.27
	41-50	24	16.22
	>51	14	9.46
LINE usage experience(months)	1-6	5	3.38
	7-12	8	5.41
	13-24	60	40.54
	>25	75	50.68
Work experience(years)	1-5	79	53.38
	6-10	19	12.84
	11-15	15	10.14
	>16	35	23.65

From Table 1, male and female are similar in number, 71 (47.97%) and 77 (52.03%) respectively. The result shows that most participants are 26-30 years old which are 51 (34.46%) followed by 31-40 years old and 20-25 at 30 (20.27%) and 29 (19.59%) respectively. And result also shows that almost participants have experience using LINE application which use more than 25 months mostly. But most participants have less working experience (1-5 years) at 79 (53.38%).

V RESULTS

For the result of this study, Multiple Regression Analysis was conducted to test the hypotheses of research model. A significance level is 0.05 ($p < 0.05$). The relationship between Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI) and Facilitating Conditions (FC) to Social-Related Use (SRU) is described in Table 2.

TABLE 2. Result of hypothees H1, H2, H3 and H4

Variables	R ²	SE _{est}	β	t	Sig. ¹¹
PE			0.430	8.323	0.000*
EE			0.134	2.570	0.011*
SI			0.298	5.675	0.000*
FC			0.259	5.144	0.000*
Total	0.748	0.283			0.000*

The result in Table 2 is described that the combination of Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI) and Facilitating Conditions (FC) has relationship with Social-Related Use (SRU) at the significance level with $p = 0.000$ ($p < 0.05$), a predictive relationship was 74.8% and standard error of prediction is ± 0.283 . Then

H1: Performance Expectancy (PE) is positively related to the Thai doctors in rural area using LINE for Social-related use (SRU) at the significance level with $p = 0.000$ ($p < 0.05$) and $t = 8.323$. Then β value is 0.430 which means that if Performance Expectancy (PE) is increased, the Social-related use (SRU) can be increased too.

H2: Effort Expectancy (EE) is positively related to the Thai doctors in rural area using LINE for social-related use at the significance level with $p = 0.011$ ($p < 0.05$) and $t = 2.570$. Then β value is 0.134 which means that if Effort Expectancy (EE) is increased, the Social-related use (SRU) can be increased too.

H3: Social Influence (SI) is positively related to the Thai doctors in rural area using LINE for social-related use (SRU) at the significance level with $p = 0.000$ ($p < 0.05$) and $t = 5.675$. Then β value is 0.298 which means that if Social Influence (SI) is increased, the Social-related use (SRU) can be increased too.

H4: Facilitating Conditions (FC) is positively related to the Thai doctors in rural area using LINE for Social-related use (SRU) at the significance level with $p = 0.000$ ($p < 0.05$) and $t = 5.144$. Then β value is 0.259 which means that if Facilitating Conditions (FC) is increased, the Social-related use (SRU) can be increased too.

The relation between for Social-related use (SRU) and social capital (SCP) is described in Table 3.

TABLE 3. Result of hypotheses H5

Variables	R ²	SE _{est}	β	t	Sig. ¹
SRU	0.551	0.360	0.742	13.391	0.000*

¹¹ Significant Levels: *: $p < 0.05$

H5: Thai doctors in rural area to using LINE for Social-related use (SRU) positively affect to Social capital (SCP) at the significance level with $p = 0.000$ ($p < 0.05$) and $t = 13.391$, a predictive relationship was 55.1 % and standard error of prediction is ± 0.360 . Then β value is 0.742 which means that if Social-related use (SRU) is increased, the Social capital (SCP) can be increased too.

Then Table 4 is shown the relationship between Social capital (SCP) and Work-related use (WRU).

TABLE 4. Result of hypotheses H6

Variables	R ²	SE _{est}	β	t	Sig. ¹²
SCP	0.405	0.516	0.636	9.959	0.000*

H6: Social capital (SCP) of the Thai doctors in rural area using LINE positively affects to Work-related use (WRU) at the significance level with $p = 0.000$ ($p < 0.05$) and $t = 9.959$, a predictive relationship was 51.6 % and standard error of prediction is ± 0.516 . Then β value is 0.636 which means that if Social capital (SCP) is increased, the Work-related use (WRU) can be increased too.

The result from six hypotheses can be concluded that all hypotheses are supported at the significance level ($p < 0.05$) which can be described in Table 5.

TABLE 5. Summary result of all hypotheese

Hypotheses	R ²	Sig. ²	Conclusion
PE → SRU	0.748	0.000*	Support
EE → SRU		0.011*	Support
SI → SRU		0.000*	Support
FC → SRU		0.000*	Support
SRU → SCP	0.551	0.000*	Support
SCP → WRU	0.405	0.000*	Support

VI DISCUSSION

This research is the study of importance factors influencing the Thai doctors in rural area to use LINE application for work-related use. The research model purposes to examine contribution factors for social-related use, social capital to promote work-related use.

The result shows Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI) and Facilitating Conditions (FC) are important factors influencing the social-related use of LINE application. It seems that when doctors found LINE application is useful for their social activities, makes their life easier, perceives the opinions of colleagues and supervisors and supported by facilities such are equipment and

internet access. It is likely that they will have more chances to use LINE application for their social activities.

Social-related use is positively impacted to social capital by helping interaction among doctors develop a concrete knowledge of each other and improvement trust among them. And doctors also perceive shared vision through social interaction such as sharing information, resources and organizational vision.

When doctors interact with each other over time, it will develop a concrete knowledge of each other and likely to develop trust in other doctors. And doctors also perceive shared vision through social interaction such as sharing information, resources and organizational vision. Doctors which are highly shared vision and trust will enable work-related use by avoiding the misunderstanding opportunities to exchange ideas or resources freely and increasing opportunities to sharing information and collaboration.

When doctors have highly shared vision can avoid the misunderstanding opportunities to exchange ideas or resources freely and also when trust is exists, the opportunities to sharing information and collaboration will be increased for work-related use including posting updates and sharing about work and organization policies with colleagues, arranging meetings and gaining access to others with expertise in a particular area.

VII CONCLUSION

This research is the study of importance factors influencing the Thai doctors in rural area to use LINE application for work-related use. The research model is designed based on UTAUT model and social capital with six hypotheses proposed. All hypotheses are positively significantly supported; the result shows that Performance Expectancy, Effort Expectancy, Social Influence and Facilitating Conditions can promote social-related use. Then using LINE application for social-related use can promote work-related use through its effect on increasing social capital which consists of social interaction ties, shared vision and trust among doctors.

Due to the limitation of this research is the focus on public social media only. Thus in the further study, it would be interesting to adapt this research to study the acceptance of new medical technologies.

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¹² Significant Levels: *: $p < 0.05$

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