Factors influencing the Use of Digital Technology by Secondhand and Bric-a-brac Sellers in Bangkok and Surrounding Provinces.

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Abstract

Continuously advancing technology has allowed people in modern society to complete many tasks in the comfort of their home through the use of digital technology. We have seen many past studies investigating factors influencing the use of new technology for selling brand-new products or providing services such as on e-commerce, online payments and online banking. However, there have not been many studies on factors influencing the use of digital technology for selling secondhand items. The objectives of this study were to 1. examine the current situation and demography of secondhand and bric-a-brac sellers in Bangkok and surrounding provinces and 2. examine factors influencing the utilization of digital technology by secondhand and bric-a-brac sellers in Bangkok and surrounding provinces. This study employed a mixed research methodology. Four hundred and thirteen sellers were asked to answer questionnaire at six largest flea markets in Bangkok and surrounding area through convenience random sampling method. Additionally, thirty in-depth interviews were also conducted to capture additional information. A research model was developed based on Technology Organization Environment Framework (TOE. integrated with Diffusion of Innovation theory (DOI. and Technology Acceptance Model (TAM.. Proposed relationships between adoption of digital technology and sixteen independent variables were tested using Multiple Regression Analysis. The empirical evidence demonstrates that Pressure from competition, Innovativeness of business owner/manager and Ability of technology of business owner/manager were found to have significant positive relationship with adoption of digital technology. The results shed light on how to Thailand could improve the use of technology among tiny busi-

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ness operators such as these secondhand and bric-a-brac sellers. The increase in the use of technology would contribute to sustainable economic development and complimentary to Thailand 4.0 scheme.

Keyword: Secondhand and Bric-a-brac, Technology Organization Environment Framework (TOE., Diffusion of Innovation theory (DOI. and Technology Acceptance Model (TAM..

Introduction

The world has witnessed an exponential growth in the use of digital technology in every aspect of life. Advancements in technology also allow people to do many things from the comfort of their homes with only using touches of their fingertips. Thailand has seen similar phenomena to the rest of the world. There is a continuing growth of e-commerce volume in Thailand from 2.03 trillion Baht in 2014 to 2.81 trillion Baht in 2017 which represents approximately an increase of 38% in 4 years (ETDA 2014-17). In Thailand there are typical online markets that sell typical products online as well as new emerging online service provider such as food delivery, repairer finders, maid finders and other services etc. However, there are not any secure online platform specially designed for secondhand and bric-a-brac items.

There are many benefits in the study on the use of digital technology by sellers of secondhand and bric-a-brac items in Thailand. Firstly, Thai government has launched a policy called "Thailand 4.0" which encourages the use of technology and creativity among Thai corporate especially small and medium enterprises (SMEs.. The use of digital technology among secondhand and bric-a-brac sellers would be supported by such policy. Secondly, better understanding of factors influencing the use of digital technology by secondhand and bric-a-brac sellers would support and strengthen economic development in Thailand at the smallest level. Finally, the success of secondhand and bric-a-brac market would promote the reuse of products and materials and reduce the consumption of new productions. This helps to reduce the use of natural resources to produce new products and reduce cost of livings and expenses.

This study provides an expansion on the scope of academic understanding

on adoption of new technology among secondhand and bric-a-brac sellers in Bangkok and surrounding provinces in Thailand. This study incorporates adoption of new technology factors based on technological, organizational and environmental contexts derived from Technology-Organization-Environment Framework (TOE. (Tornatzky and Fleisher, 1990. with an individual context based on Diffusion of Innovations theory (DOI. (Rogers, 1995. and Technology Acceptance Model (TAM. (Davis, 1989. to capture factors influencing adoption of digital technology by secondhand and bric-a-brac sellers in Bangkok and surrounding provinces.

Research Objectives

1. To examine the current situation and demography of secondhand and bric-a-brac sellers in Bangkok and surrounding provinces.

2. To examine factors influencing the utilization of digital technology by secondhand and bric-a-brac sellers in Bangkok and surrounding provinces.

Scope of Study

This research conducted surveys and interviews on sellers of secondhand and bric-a-brac items at six flea markets in Bangkok and surrounding provinces including Pattavikorn, Chatuchak and Klong Thom-Pubplachai flea market in Bangkok, Talad-Thai flea market in Pathumthani, Pantip 2 flea market in Nonthaburi and Rod Fai Srinakharin flea market in Samutprakarn. The research was conducted from June to July 2018.

Literature Review

Technology-Organization-Environment Framework (TOE.

In 1990, Tornatzky and Fleisher proposed a model that explains adoption of new technology by organization called Technology-Organization-Environment Framework (TOE.. TOE proposes that there are three contexts namely technology, organization and environment that influence an adoption of new technology. Technological context refers to internal and external technologies relevant to the firm as well as compatibility (Tornatzky and Fleisher, 1990.. Organizational context refers to characteristic/culture of the firm, quality of human capital, objective of the firm, resources and linkages among employees (Sabherwal, Jeyaraj & Chowa, 2006; Tornatzky and Fleisher, 1990.. Environmental context refers to external situation such as size and structure of the industry, competitors, economic environment, regulatory environment and cul-

ture of society (Tornatzky and Fleisher, 1990; Zhu, Kraemer & Xu, 2003.. espite positive contributions to the analysis of technology adoption, major criticism of TOE is the lack of consideration for individual context. According to Ghobakhloo & Tang (2013. this model ignores factors related to individual attributes concerning employees and managers.

Diffusion of Innovation Theory (DOI.)

The concept of diffusion of innovations has been around in academic discussions for a long time. However it was Rogers (1995. who made the theory of Diffusion of Innovation (DOI. popular his book Diffusion in Innovations. The theory aims to explain how new ideas or innovation spread from one entity to another. The entity can be an individual or an organization. Rogers (1995. suggested that four factors are responsible for the transfer or diffusion of innovation; the innovation itself, communication channels, time and a social system. The DOI further suggests that the rate of adoption of innovation is determined by the category of adopter within a social system. There are five categories of adopter namely innovators, early adopters, early majority, late majority and laggards. These five categories of adopter are related with the degree of innovativeness which influences greatly to adoption of technology by individual. However, for organization, more complexity is involved since organization aggregate individual members and its system. Five factors that determine the rate of adoption for both individual and organization include relative advantage, compatibility, complexity, trialability and observability (Rogers, 1995..

Contrary to TOE, DOI lacks the environmental dimension or external business environment on its analysis and researchers should seek to extend DOI with other theoretical perspectives (Lyytinen, & Damsgaard, 2001.. Furthermore, according to Hsu, Kraemer, & Dunkle (2006., Rogers' innovation diffusion theory is better able to explain innovation diffusion internally within an organization rather than externally.

Technology Acceptance Model (TAM.

TAM model was proposed by Davis (1989. as a model that explains the acceptance of new technology. TAM was formulated from social psychology theory of TRA (Fishbein and Azjen, 1975. which generally explains the process of committing an action by individual. TAM posits that when users are faced with new technology, two important determinants are of primary relevance for technology acceptance. These two determinants are

Perceived Usefulness (PU. and Perceived Ease of Use (PEU.. Perceived Usefulness (PU. can be defined as "the prospective user's subjective probability that using a specific application system will increase his or her job performance within an organizational context" (Davis, Bagozzi & Warshaw, 1989. whereas the Perceived Ease of USE (PEU. refers to "the degree to which the prospective user expects the target system to be free of effort" (Davis, Bagozzi & Warshaw, 1989, p. 985.. In general, whatever factors that can be perceived as usefulness, can be used as the Perceived Usefulness (PU. determinant. The attitude toward using a new technology (A. is then determined by PU and PEU. Venkatesh & Davis (2000. integrated the process of social influences and cognitive instrumentals into TAM. Furthermore, review of literature shows that the most widely used model to study adoption of new technology by individual was TAM as it has become powerful model to explain and predict technology acceptance behavior (Mun & Hwang, 2003..

The Use of Digital Technology

In this study, the use of digital technology is treated as dependent variable. The use of digital technology of an organization can be derived from different activities in operation process of the unit of analysis. This approach was adapted from Gibbs & Kraemer (2004., Rahayu & Day (2015. and Ramdansyah & Taufik (2017.. The processes include Use of Digital Technology (Sellers use digital technology to find cheap secondhand products and buy them to refurbish/resell to final customers., Use of E-Advertise (Sellers use digital technology to advertise their products., Use of E-Selling (Sellers use digital technology to sell bric-a-brac/ secondhand item to buyers. and Use of E-Payment (Sellers accept electronics payment through secure online platform.. Palacios-Marqués, Soto-Acosta & Merigó (2015. extends the study of technology use in firm and argued that the use of technology in firms increase the knowledge exchange between employees.

Conceptual Framework

In this research, three contexts (Technology, Organization and Environment. based on TOE in integration with DOI and TAM were utilized to explain adoption of digital technology. Sixteen variables were constructed from relevant empirical studies. The conceptual framework can be seen in the figure 1

Hypothesis

This research utilizes the TOE framework in integration with the DOI theory and TAM as a theoretical basis to de-

velop both dependent and independent variables which led to hypotheses. Sixteen hypotheses are shown as follow:

H1: Partners positively influences adoption of digital technology.

H2: Supplier Readiness positively influences adoption of digital technology.

H3: Government positively influences adoption of digital technology.

H4: Market positively influences adoption of digital technology.

H5: Competitive Pressure positively influences adoption of digital technology.

H6: Trading Partner Pressure positively influences adoption of digital technology.

H7: Customer Pressure positively influences adoption of digital technology.

H8: Technology Experience positively influences adoption of digital technology.

H9: Perceived Needs positively influences adoption of digital technology.

H10: Perceived Value positively influences adoption of digital technology.

H11: Innovativeness positively influences adoption of digital technology.

H12: Ability of Technology positively influences adoption of digital tech-

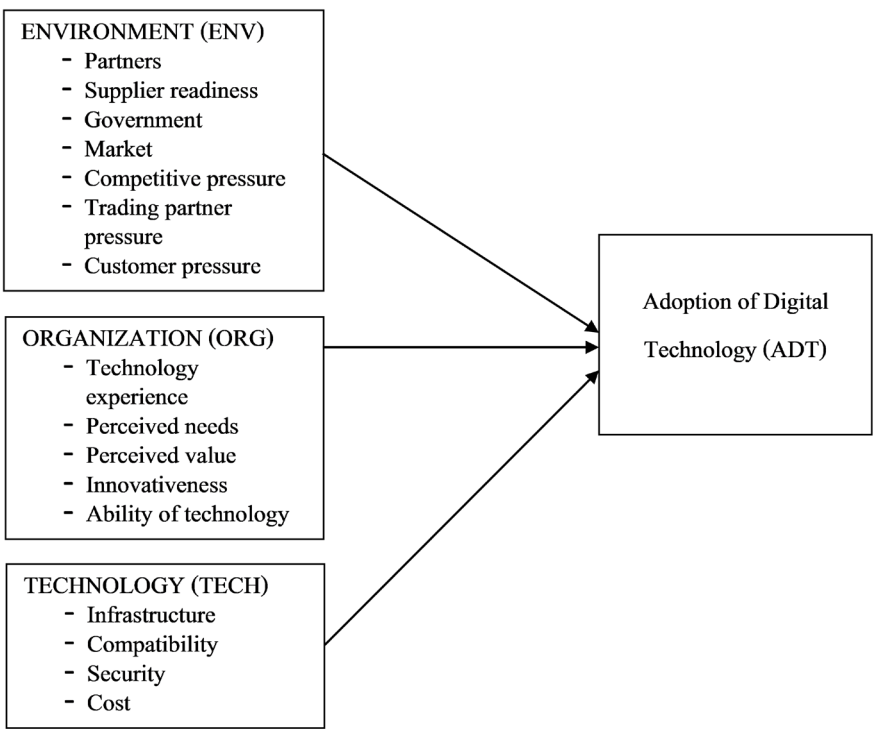

Figure 1 Research Model

nology.

H13: Infrastructure positively influences adoption of digital technology.

H14: Compatibility positively influences adoption of digital technology.

H15: Security positively influences adoption of digital technology.

H16: Cost negatively influences adoption of digital technology.

The description of sixteen factors, their code name and relevant empirical studies can be seen in table 1.

Table 1 Description of variables

Construct	Code Name	Conceptual Description	Reference
Partners	ENV1	Availability of the right partners	Wymer & Regan (2005.
Supplier Readiness	ENV2	Readiness of suppliers to use digital technology.	Alshamaila, Papagiannidis & Li (2013.
Government	ENV3	Government measures or regulations.	Scupola (2009.
Market	ENV4	Viable markets that allow the use of digital technology.	Ramdani, Kawalek & Lorenzo (2009.
Competitive Pressure	ENV5	Pressure from your competitors who succeeded in using digital technology.	Ghobakhloo, Arias-Aranda & Benitez-Amado (2011.
Trading Partner Pressure	ENV6	Pressure from trading partners to use digital technology.	Ghobakhloo, Arias-Aranda & Benitez-Amado (2011.
Customer Pressure	ENV7	Pressure from customers who are adept users of digital technology.	Ghobakhloo, Arias-Aranda & Benitez-Amado (2011.;
Technology Experience	ORG1	Experience with digital technology of owner/manager.	Alshamaila, Papagiannidis & Li (2013.

Table 1 (Contrinue)

Construct	Code Name	Conceptual Description	Reference
Perceived Needs	ORG2	I think it is necessary to use digital technology on my business operations.	Wymer & Regan (2005.
Perceived Value	ORG3	I think the use of digital technology adds value and beneficial to my business.	Wymer & Regan (2005.
Innovativeness	ORG4	The degree to which I am open to new technology.	Alshamaila, Papagiannidis & Li (2013.
Ability of Technology	ORG5	I have ability to operate my business fully with the use of different digital technologies.	Scupola (2009.
Infrastructure	TECH1	Sufficient digital technology infrastructure supports the use of digital technology.	Scupola (2009.
Compatibility	TECH 2	Compatibility of digital technology to my business operations	Alshamaila, Papagiannidis & Li (2013.
Security	TECH 3	Safety when using digital technology to operate my business.	Wymer & Regan (2005.
Cost	TECH 4	The cost to setup digital technology for business operations as well as maintenance.	Ghobakhloo, Arias-Aranda & Benitez-Amado (2011.

Research Methodology

Sampling and Data Collection

This study employed a mixed research methodology. The quantitative methodology was conducted through surveys with the use of questionnaire at the six largest secondhand and bric-a-brac flea markets in Bangkok and surrounding provinces. These six flea markets are all the major secondhand flea markets in Bangkok and surrounding provinces. The first part of questionnaire was designed to obtain demographic information of respondents and second part contained questions according to research model and theoretical framework (TOE, DOI and TAM.. A convenience random sampling method was selected to obtain unbiased data from respondents. The qualitative methodology was conducted through in-depth interviews with open questions to capture information in all dimensions that might not be presented in questionnaire. A questionnaire pre-test was conducted using thirty samples at a similar but smaller size flea market in Bangkok. A Cronbach's alpha reliability test was applied to the pre-test survey which resulted in an acceptable alpha value of 0.89. Thus no adjustment was needed. The study utilized Cochran sampling technique to calculate research's sample size due to unknown population of buyers. The total number of 413 respondents answered to survey questionnaire which exceeds minimum sample size of 385 at 95% confidence level according to Cochran (1977..

Statistical instruments

This study utilized Multiple Regression Analysis to capture relationship between dependent variable and independent variables. A freeware statistical analysis program was utilized to compute Multiple Regression Analysis. A p value of less than 0.05 indicates high relationship between variables.

Research Results

Section 1 is aimed to answer the first research question (what is the current situation and demography of secondhand and bric-a-brac sellers in Bangkok and surrounding provinces. while section 2 and 3 are aimed to address the second research question (what are the factors influencing the utilization of digital technology by secondhand and bric-a-brac sellers in Bangkok and surrounding provinces.)

1. Current situation and demographic information

1.1 Business Structure

The result suggested that sole owner business structure is the majority

business structure within the secondhand and bric-a-brac sample size. It makes up 57.38% out of all sellers. The second largest type of business structure is family owned which contributes to 25.42%. The rest includes co-owned with partners which contributes to 13.80% and others which contributes to 3.40%. This information indicates that most of secondhand and bric-a-brac sellers are micro enterprises that owned by individual or within family root.

1.2 Time since the start of business

The highest number of sellers has started their business between 2-4 years ago. This group makes up 32.44% out of total sample size. The second largest group comes from those sellers that started their business between 4-5 years ago which make up 29.06% out of the total sample size. The third largest group comes from the sellers with less than 2 years since the start of their business which makes up 23% out of the total sample size. The rest of the sellers include those with 6-8 years and 8-10 years since the start of their business make up 10.9% and 4.6% out of the total sample size respectively. It can be seen that sellers with less than 2 years operating time and sellers with 2-4 years operating time make up 55.45% out of the total sample size. This might reflects a growing secondhand bric-a-brac market in the last four years in Bangkok and surrounding provinces in Thailand as more people become a seller in secondhand and bric-a-brac market.

1.3 Annual Turnover

The annual turnover of less than 100,000 Baht makes up 49.39 % of the total sample size and annual turnover between 100,001 – 200,000 Baht makes up 41.90% of the total sample size. These two groups (less than 200,000 Baht. make up 91.29 % of the total sample size. This result is significant as it indicates that these sellers are earning low income and fit the definition of micro enterprises very well. Other groups of annual turnover include 200,001 – 300,000 Baht and 450,001 – 600,000 Baht make up 8.47% and 0.24% out of the total sample size respectively. However, one should consider also that these sellers may not want to reveal true number of their earning since it could affect their tax payments.

2 Multiple Regression and Hypotheses testing

The obtained information was tested for reliability prior running the Multiple Regression Analysis using the Cronbach's alpha technique. The value obtained was 0.73 indicating that the result is acceptable.

Adoption of digital technology (ADT. and sixteen independent variables including ENV1, ENV2, ENV3, ENV4, ENV5, ENV6, EN7, ORG1, ORG2, ORG3, ORG4, ORG5, TECH1, TECH2, TECH3 and TECH4 were analyzed using Multiple Regression Analysis to capture underlying correlations as shown in table 2.

The result shows that this Multiple Regression Model with sixteen predictors produced r2 value of 0.09 with three variables namely ENV5 (0.02., ORG4 (0.04. and ORG5 (0.02. having p value less than 0.05. This suggests that these three variables have significant influence on the adoption of digital technology (ADT.. Therefore, null hypothesis can be rejected and it can be concluded that ENV5, ORG4 and ORG5 are determinant variable to ADT. It can be concluded that H5, H11 and H12 are supported and other hypotheses are not supported. The r2 value indicates the explanatory power of 9 percentage of this model. Lower p value is very common in the field of social science study.

It can be elaborated further that Pressure from competition (ENV5), Innovativeness of business owner/manager (ORG4) and Ability of technology of business owner/manager (ORG5) play the most important role on the adoption of digital technology among secondhand and bric-a-brac sellers in Bangkok and surrounding provinces. This reflects a few interesting points of current situation of secondhand and bric-a-brac market in Thailand. Firstly, the result reflects the importance of innovativeness and technological ability on an individual level as the level of openness to new technology and the existing ability on technology are significantly influencing the adoption of digital technology in this case. This fits very well to the DOI theory of Roger (1995. that there are different categories of adopters of technology which influence how fast each individual utilizes new technology. Other individual contexts adapted from TAM such as individual's perception were insignificant to adoption of digital technology. Secondly, the insignificance of technological factors (TECH1, TECH2, TECH3 and TECH4) on adoption of digital technology. This could show that the availability and accessibility of technology in Thailand is well distributed. Everyone can easily buy devices and pay digital service provider in order to start digital business operations. Therefore, technological infrastructure, security, compatibility and cost are at the level that is satisfactory on a whole and are not a significant factor anymore. Lastly, in terms of organizational context, only pressure from competitor (ENV5) is significant to the adoption of digital technolo-

Table 2 Multiple Regression Analysis

Model Summary (ADT.

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.3	0.09	0.06	0.42

ANOVA (ADT.

	Sum of Squares	df	Mean Square	F	Sig
Regression	7.00	16	0.44	2.51	0.001
Residual	68.99	396	0.17		
Total	75.99	412			

Coefficients (ADT.

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant.	-0.04	0.25	0.00	-0.15	0.88
ENV1	-0.04	0.04	-0.07	-1.01	0.31
ENV2	0.00	0.05	0.00	0.01	0.99
ENV3	-0.04	0.04	-0.07	-1.07	0.29
ENV4	0.05	0.05	0.08	1.13	0.26
ENV5	-0.12	0.05	-0.18	-2.41	0.02
ENV6	0.09	0.07	0.13	1.27	0.21
ENV7	-0.02	0.07	-0.03	-0.35	0.73
ORG1	0.11	0.06	0.15	1.78	0.08
ORG2	0.01	0.06	0.02	0.20	0.84
ORG3	0.06	0.04	0.11	1.47	0.14
ORG4	-0.11	0.05	-0.18	-2.07	0.04
ORG5	0.09	0.04	0.16	2.37	0.02

Table 2 (Contrinue)

Coefficients (ADT.					
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
TECH1	-0.02	0.04	-0.04	-0.52	0.60
TECH2	0.10	0.05	0.18	1.91	0.06
TECH3	-0.03	0.08	-0.06	-0.35	0.72
TECH4	0.00	0.08	0.00	-0.01	0.99

gy. This reflects that secondhand and bric-a-brac sellers in Bangkok and surrounding provinces are starting to utilize digital technology on their business operations and hence more competition. Other environmental factors involving business partners do not tend to affect adoption of digital technology as it is presumably easier to be flexible with your partners than competitors. Pressure from buyers also does not play an important role on the adoption of digital technology here. This could reflect that if secondhand and bric-a-brac sellers do not start utilizing digital technology, the buyers are content to stay with traditional method.

In conclusion, the TOE framework still provide a solid theoretical basis for analysis of secondhand and bric-a-brac sellers in Bangkok and surrounding provinces as both organizational and environmental context are significant to the adoption of digital technology. DOI theory also plays a big part due to the fact that the characteristic of business structure are very much on an individual level and their level of innovativeness play an important role on the adoption of technology. On the other hand, constructs adapted from TAM for individual context were insignificant and indicate that TAM is not suitable theoretical framework to analyze secondhand and bric-a-brac sellers in this case. Lastly, the lack of influence from technological context can be explained by the well developed infrastructure and service provider in Thailand as well as well spread technological knowledge and knowhow currently.

3 Interviews

In order to obtain in-depth knowledge of adoption of digital technology

among secondhand and bric-a-brac sellers in Bangkok and surrounding provinces as well as to support quantitative analysis in earlier sections, thirty interviews were conducted to extract additional comments from open questions. The result of interview is as follows:

1. There are existing online market places on Facebook social media platform. This kind of market place comes in the form of Facebook group. These Facebook groups might be ones that focus on specialized products such as vintage electronic devices, toys, vintage furniture and old notes or ones that offer variety of products. There are also Facebook groups that items are simply posted for sale with price shown or items are posted for auction. The most popular Facebook auction group is called "Saneur-Duan" which means "offer (the price. quickly". Most of these platforms on Facebook are closed groups. To participate in a group, you must have your own Facebook account and request to join. Once the administrator permits you to join, you can post the item you wish to sell or post a price to wish to buy from other sellers. On auction platform, you keeping posting prices until the seller accept your price and the item is sold. The purchase of item though is conducted outside the Facebook group. You can either meet in an agreed place and pay cash or transfer money to seller's bank account and wait for the item to be shipped to your address. These Facebook platforms are used to look for and to sell items for some sellers. The items bought from Facebook will be put up for sale at flea markets while items that cannot be sold for a long time will be put up for sale on Facebook.

2. A lot of time when buyers want to buy items from sellers' shop but did not bring enough cash with them, sellers would ask buyers to use transferring of money online method such as online bank applications or QR code payment. However, if a buyer does not prefer to use these online platforms, the seller might choose to give a buyer his or her bank account to transfer money later and allow buyer to leave with items. This is very risky since sometimes the buyers just disappear with the items without transfer of money later.

3. Some sellers prefer to sell offline because they have old customers who buy in big quantity. By selling online straight to customers, they risk losing big customers which is not worth it considering the work that has to be put in for selling online (taking pictures, providing item descriptions for each different item

and posting on electronic platform etc...

4. Secondhand and bric-a-brac market requires building trust between seller and buyers. Therefore, sellers prefer to sell off-line in order to build trust with customers so that they could return the next time.

5. Main obstacles of adopting digital technology is the risks involved of selling online such as financial information and risk of being scammed by buyers. Another problem is the lack of technological ability to take pictures and post items online.

6. Factors that would help the adoption of digital technology include ability to buy items from any place and time, available technology such as electronic payment and QR code payment system and creditability of selling shops.

Conclusion

This study provided empirical evidence to demonstrate that most of secondhand and bric-a-brac sellers are micro enterprises that owned by individual or within family root with low annual incomes less than 200,000 Baht annually. The study also revealed that in the last four years, there is a growing number of new secondhand and bric-a-brac sellers which indicates a growing market.

The study also demonstrated that TOE framework in integration with DOI and TAM theories provide a solid theoretical basis to explain the adoption of digital technology among secondhand and bric-a-brac sellers in Bangkok and surrounding provinces. The Multiple Regression analysis demonstrated that the Pressure from competition (ENV5: p value of 0.02., Innovativeness of business owner/manager (ORG4: p value of 0.04. and ability of technology of business owner/manager (ORG5, p value of 0.02. have p value less than 0.05 and thus have a significant relationship with adoption of digital technology (ADT..

Interviews showed that today's secondhand and bric-a-brac sellers in Bangkok and surrounding provinces are already using digital technology in their selling process on social media. This is mostly to look for items and to move on unsellable item. However, selling in traditional way remains important as sellers need to build trust with buyers as well as allowing buyers to inspect items. The main factors that would increase the adoption of digital technology are conveniences for buyers and reputation of sellers.

Contribution to knowledge

Past studies related to the adoption of new technologies among organiza-

tional entity such as SMEs often concern with e-commerce, software for management or online banking system. The business operations or firm objectives of these entities often involve new products or service. This study provided additional perspective on the use of new technology on selling secondhand and bric-a-brac items by micro-business entity in developing country. This study also extended the scope of TOE to include DOI and TAM in order to capture individual influence of such small entity as organizational unit of analysis in the context of secondhand and bric-a-brac market in Bangkok and surrounding provinces.

Contribution to practice

This study provided empirical evidence to suggest that the use of digital technology on selling secondhand and bric-a-brac items in Bangkok and surrounding provinces is on the rise due to external pressure by competitors and the openness to new technology by sellers. The result from interview also shows that selling through the use of digital technology provides conveniences for buyers as well as a useful way to move on unsellable items cheaply to other sellers. It is important to create electronic platforms in which sellers could build their reputation as well as providing secure payment for customers. The success and an increase on the usage of digital technology would compliment Thai Government's policy of Thailand 4.0 that encourage the use of technology and creativity as well as providing positive contributions to sustainable development goal. The growth of these sellers also contribute to Thailand's economic development at the very smallest level.

Limitation and Recommendation

This study focused on organizational context based on TOE and individual context based on DOI and TAM. In terms of organizational context, this study only utilized TOE as a theoretical basis to adapt constructs. The future study could extend its scope to include DOI for organizational context. Factors such as complexity, trialability and observability based on DOI might be interesting addition for future studies. In terms of individual context, factor such as age of owner/manager would be interpreting addition to future research model as older people tends to be less adept on the use of new technology when compared to younger generations. Inclusion of factors such as age and gender or social experience would require integration of more complex theoretical model such as UTAUT. Other factors such

as conveniences and creditability or reputation of seller would also provide useful additional perspective for future study.

In terms of research sample, this study did not consider on variety of secondhand and bric-a-brac market. There are different specialized markets in various product categories. While some markets may have more sellers specialized in collectible items such as home decorations or bric-a-brac items, others may have more secondhand sellers selling used items from homes such as clothes, tools and household items. Therefore each market may have different characteristics toward the use of digital technology based on product categories and customer behavior. For example, secondhand household may be cheap and do not possess high collectible values, buyers are seeking for their own use and thus they might not feel so much risk to buy through electronic payment when compared to collectible rare items which are likely to be more expensive and required specialized knowledge to identify.

Reference

Alshamaila, Y., Papagiannidis, S., & Li, F. (2013.. Cloud computing adoption by SMEs in the north east of England: A multi-perspective framework. Journal of Enterprise Information Management, 26(3., 250-275.

Cochran, W. G. (1977.. Sampling techniques (3rd ed... New York: John Wiley & Sons.

Cronbach, L. J. (1951.. Coefficient alpha and the internal structure of tests. Psychometrika, 16(3., 297-334.

Davis, F. D. (1989.. Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS quarterly, 319-340.

Davis F.D., Bagozzi R.P. & Warshaw P.R., (1989., “User Acceptance of Computer Technology: A Comparison of two Theoretical Models”, Management Science, 35(8.: 982-1003

Fishbein, M., & Ajzen, I. (1975.. Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research. Reading, MA: Addison-Wesley.

Gangwar, H., Date, H., & Ramaswamy, R. (2015.. Understanding determinants of cloud computing adoption using an integrated TAM-TOE model. Journal of Enterprise

Information Management, 28(1., 107-130.

Ghobakhloo, M., Arias-Aranda, D., & Benitez-Amado, J. (2011.. Adoption of e-commerce applications in SMEs. Industrial Management & Data Systems, 111(8., 1238-1269.

Ghobakhloo, M. and Tang, S.H. (2013.. "The role of owner/manager in adoption of electronic commerce in small businesses: The case of developing countries", Journal of Small Business and Enterprise Development, Vol. 20 Iss: 4, pp.754 - 787

Gibbs, J. L., & Kraemer, K. L. (2004.. A cross-country investigation of the determinants of scope of e-commerce use: an institutional approach. Electronic markets, 14(2., 124-137.

Hsu P.F., Kraemer K.L., and Dunkle D. (2006.. Determinants of E-Business Use in U.S. Firms, International Journal Of Electronic Commerce, Vol. 10, No. 4, pp 9-45.

Lyytinen, K., & Damsgaard, J. (2001, April.. What's wrong with the diffusion of innovation theory?. In Working Conference on Diffusing Software Product and Process Innovations (pp. 173-190.. Springer, Boston, MA.

Mun, Y. Y., & Hwang, Y. (2003.. Predicting the use of web-based information systems: self-efficacy, enjoyment, learning goal orientation, and the technology acceptance model. International journal of human-computer studies, 59(4., 431-449.

Palacios-Marqués, D., Soto-Acosta, P., & Merigó, J. M. (2015.. Analyzing the effects of technological, organizational and competition factors on Web knowledge exchange in SMEs. Telematics and Informatics, 32(1., 23-32.

Ramdani, B., Kawalek, P., & Lorenzo, O. (2009.. Predicting SMEs' adoption of enterprise systems. Journal of enterprise information management, 22(1/2., 10-24.

Ramdansyah, A. D., & Taufik, H. E. R. (2017.. Adoption Model of E-Commerce from SMEs Perspective in Developing Country Evidence–Case Study for Indonesia. European Research Studies, 20(4B., 227-243.

Rogers, E.M. (1995.. Diffusion of Innovations (3rd ed... New York: Free Press.

Sabherwal, R., Jeyaraj, A., & Chowa, C. (2006.. Information system success: individual and organizational determinants. Management science, 52(12., 1849-1864.

Scupola, A. (2009.. SMEs'e-commerce adoption: perspectives from Denmark and Australia. Journal of Enterprise Information Management, 22(1/2., 152-166.

Rahayu, R., & Day, J. (2015.. Determinant factors of e-commerce adoption by SMEs in developing country: evidence from Indonesia. Procedia-Social and Behavioral Sciences, 195, 142-150.

Tornatzky, L.G., and Fleischer, M. (1990.. The Processes of Technological Innovation. Lexington Books, Lexington, Massachusetts.

Thailand's Small and Medium Enterprises Promotion Act. B.E.2543 (2000.

Value of e-commerce survey in Thailand 2014-2017. Electronic Transactions Development Agency (ETDA., Ministry of Digital Economy and Society of Thailand.

Venkatesh, V., & Davis, F. D. (2000.. A theoretical extension of the technology acceptance model: Four longitudinal field studies. Management science, 46(2., 186-204.

Wymer S.A. and Regan E.A., (2005.. Factors Influencing e-commerce Adoption and Use by Small and Medium Businesses. Electronic Markets, 15(4.. pp. 438-453.

Zhu, K., Kraemer, K., & Xu, S. (2003.. Electronic business adoption by European firms: a cross-country assessment of the facilitators and inhibitors. European Journal of Information Systems, 12(4., 251-268.