Factors Influencing Actual Use of e-Payment Adoption by SMEs in Phitsanulok

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Abstract

The aims of this research is to investigate and examine the factors affecting the actual use e-Payment by Small and Medium Enterprises (SMEs) located in Phitsanulok using 413 respondents obtained from surveys for investigating and testing a conceptual proposed model based on elements of Technology acceptance. The empirical results indicated that business characteristics including the business size, the business sector, the age of business operation and the activity in high-frequency trading or financial transaction business are significant factors towards the perception of benefits of e-Payment usage by SMEs. Further testing the hypotheses, moreover, revealed that all the three factors jointly predictive SMEs' satisfaction made 77% of e-Payment actual use (the ease of use, attitudes and behavioral intention to use). However, the perceived usefulness was not found to be significantly associated with the actual use in this study. The novel contribution of this research is to perform a value strategy for Business owners and practitioners associated with the e-Payment system and intention to adopt of such initiatives. Even though the model is not generalizable, future studies could investigate the various kinds of factors that influence e-Payment adoption in various business contexts.

Keywords: 1) e-Payment service 2) e-Payment adoption 3) SMEs 4) TAM 5) Business owner

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Introduction

The great advance of digital technology has brought about changes in human life, particularly the ways of doing business (Cao, et al., 2018, pp. 456-476). With the Internet users growing rapidly and the e-commerce market on a constant rise and evolving with each passing day, Electronic payment (e-Payment) was developed to facilitate e-commerce transactions between sellers and customers (Khan, et al. 2017, p. 256; Su, Wang and Yan, 2018, p. 186). The technological e-Payment system is entering the cultural zeitgeist, not only in customer payment's behaviors, but also in SMEs owners/managers' perspectives on attitudes and behavioral intention of e-Payment adoption (Liébana-Cabanillas, Ramos de Luna, and Montoro-Ríos, 2015, pp. 1031-1049). In this research, e-Payment is considered as online payment transactions that are conducted through the use of the Internet access via multiple forms of electronic payment devices (e.g. electronic card payment, Internet banking, e-money, QR codes, PayPal and so forth).

Phitsanulok's SMEs have been recognized as a backbone of the economic development in Lower Northern Thailand and played pivotal roles in Thai economy by making significant contributions in terms of increasing job opportunities, businesses, logistics and gaining investment opportunities during the past decade (OSMEP, 2020a). Notwithstanding, with the Covid-19 pandemic situation together with the high competition market, due to the constant increase in new businesses and a variety of products offered via e-commerce—Thai SMEs, particularly businesses located in Phitsanulok tend to be more adaptable to changes in the business nature by creating competitive advantages for a better performance, and expanding coverage and increasing loyalty by providing the best experience for customers (OSMEP, 2020a). One such technology that attracts the attention of many business owners is e-Payment adoption that also enables SMEs to improve business productivity by empowering businesses to track all transactions faster (Bank of Thailand, 2020). The e-Payment is considered as a part of digital maketing ecosystem that fulfills the businesss transition in the new cutting edge of digital experience. Previous research indicates that many different factors can influence the decision to adopt e-Payment. These factors might be internal and external forces that become game-changers for many SMEs. Although the adoption of e-Payment could enable such SMEs to perceive the benefits of such adoption related to their investment of transaction costs such as a cheap, easy, and secure method to transmit information, a challenge of such initiatives coupled with the barriers faced by SMEs, is inevitable (Bailey, et al., 2017; Mahor, 2017, pp. 103-119; Mustapha, 2018, pp. 1-14; Tiwari and Singh, 2019, pp. 626-640).

Even though numerous research studies on e-payment have been conducted in different regions of Thailand, and showed some similar results, this study is different, with the aim of investigating the level of e-Payment adoption at Phitsanulok province with two main gaps and reasons. Firstly, there is a growing number of online businesses in Phitsanulok which could make it difficult to achieve

their success margin in a short period of time, uptake of electronic payment services which is a part of online business—could be a strategic method that brings the opportunity for business owners who remain reluctant to engage in such technologies. Secondly, in Phitsanulok, most SMEs are family-owned business, and now the second and third generation play a greater role in running the businesses instead of the older members in their family. This is a gap on whether the adoption of new technologies such as e-payment system stems from their forefathers' vision or from the current business owners who are more knowledgeable in IT and new technological tools. This is a gap that needs to be addressed. Moreover, considering the factors and barriers underpinning the e-Payment system leading to the attitude and intention towards adopting it— this kind of study is also essential.

The adoption of appropriate e-Payment systems may be different from one country to another and depend on the culture and business context (Mustapha, 2018, pp. 1-14). So far, there is a limited number of research studies conducted to understand the factors affecting e-Payment adoption by SMEs in Phitsanulok. According to The Office of Small and Medium Enterprises Promotion (OSMEP) 2020, Phitsanulok will be a center of information and communication technology (ICT) development in the lower northern region of Thailand, and SMEs will be supported by governance enhancing the potential of online entrepreneurs with digital marketing (OSMEP, 2020b). This means that such technology will be integrated with e-Payment options to enable SMEs to generate e-invoices and receipts or make e-Payment seamless (Khan, et al., 2017). Thus, the adoption of such initiatives is crucial. Under the above circumstances, the main question of this research is: What are the factors directly affecting the actual use of e-Payment system by SMEs located in Phitsanulok, Business District Areas (CBD)?. To answer the research question, two fundamental research objectives are proposed as follows: 1) To investigate the characteristics of business factors related to the decision on the adoption of e-Payment System by SMEs—and 2) To examine the factors directly affecting the actual use of e-Payment system by SMEs?

This study also proposes a conceptual acceptance model developed from the integration of different core variables of Technology Acceptance Model (TAM) Theory to achieve overarching research questions of the study.

Literature Review

Technology Acceptance Model: TAM

The proposed model of this research study has been developed and employed to determine the factors towards e-Payment adoption by using TAM Theory. TAM was first introduced by Davis (1986) to determine the behavior of individual technology usage by constructing with Perceived Usefulness (PU) and Perceived Ease of Use (PEOU), leads to Attitude towards using (ATT), Behavior Intention (BI) of acceptance as well as Actual use (ActUse). Based on TAM theory, this research study assumes that there is a significant positive relationship between External variables, 'PEOU', 'PU', 'attitude toward using' and

'Behavioral intention' related to the adoption of e-Payment.

Business characteristic impacts on PU of e-Payment systems

Research suggests that the External Variables that affect SMEs adoption technology could stem from external forces such as social influence, trust, individual preferences and facility conditions. However, this study focuses on demographic of SMEs and government policy that is considered important factors for SMEs context in Phitsanulok. Prior research conducted by Mkansi (2021, pp. 1-41) and Thilagavathy and Santhi (2017, pp. 1-4) found that the size of the business, the business sector of the business, age of business operation and activity in high-frequency trading or financial transaction business (Mustapha, 2018, pp. 1-14)—influence the adoption of new payment technology to stay on the competitive edge of business development. Moreover, government policies and fundamental welfare program proposed through the e-Payment system (Azmi, Ang and Talib, 2016, pp. 391-410), particularly the Thai government proposed the government's co-pay scheme, to help cut the general public's cost of living known as 'Khon La Khrueng', 'Rao Chana', 'Rao Rukgun' and so forth– of which the money is transferred via the "Pao Tang" applications used by people, as a results; the adoption of such technologies is inevitably as customers must pay via the use of QR codes, rather using cash on purchase at a time. Hence, SMEs that deny the existence of these suppositions could lose the market share to their competitors or even the opportunity provided by governments in the future.

The implications of PU, PEOU, ATT, BI and ActUse in relation to e-Payment adoption.

Numerous studies within e-Payment system adoption have endorsed the significant relationship between PEOU and attitude toward using such initiatives adoption. (Kaur, et al., 2020, pp. 1-11; Riskinanto, Kelana and Hilmawan, 2017, pp. 536-543; Sivathanu, 2018, pp. 143-171; Su, Wang and Yan, 2018, pp. 186-197). This includes: 1) Users can learn and understand e-Payment system functionalities easily and instantly, 2) Staff can easily get the training and learning about it, 3) It is easily integrated into retailer applications, 4) There is no need to invest more resources and to change corporate strategies, 5) e-Payment methods are non-complex to use with various functionalities, and 6) The use responds to the habits of consumer payment.

Besides having effects on the attitude of using, PEOU also enhances the PU effect on e-Payment adoption. This is because an effective design of e-Payment systems in terms of speed and functionalities, compared to other forms of payment method, might attract SMEs owners' adoption towards e-Payment system. Hence, this study proposes the following hypotheses:

H1: PEOU positively impacts ATT of e-Payment adoption; and

H2: PEOU positively impacts PU

Previous research indicated significant benefits of e-Payment adoption from business owners' perspectives stemming from individuals (owners/managers) that have confidence in the use of technology contributing to their job and business performances. (Brakewood,

et al., 2020, pp. 89-116; Jocevski, Ghezzi and Arvidsson, 2020, pp. 1-13; Kaur, et al., 2020, pp. 1-11; Özkan, Bindusara and Hackney, 2010, pp. 305-325; Tella and Abdulmumin 2015, pp. 272-286). Ease of use of e-Payment system includes: 1) Increasing alternative payment channels at low cost, reducing staff and office equipment-related payment, 2) Enhancing convenience, business flexibility and security in making payments anywhere, anytime, 3) Accuracy of payment amounts, 4) Reducing payment process resulting in more purchasing, 5) Reducing errors in financial transactions such as shortchange, not having enough cash (coins/banknote) to give the change back 6) Preventing financial crime (i.e. cash stolen and embezzlement by staff, 6) Tracking cash flow activity, preparing tax reports, and analyzing information for management, 7) Enabling the analysis of customers payment behavior, 8) Enabling the prediction of income and expenses in advance, reducing daily bookkeeping.

Particularly, PU could directly relate to behavioral intention to use e-Payment system. This is because the usefulness of such adoption could be acknowledged by increasing payment of choice without any fees where they had the intention of accepting it from the beginning. Hence, the proposed following hypotheses are:

H3: PU positively impacts ATT of e-Payment adoption; and

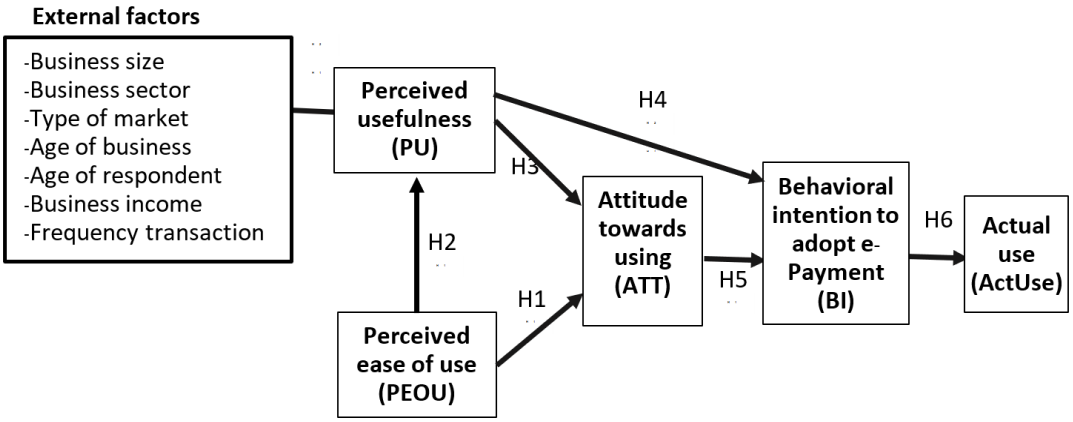
H4: PU directly impacts BI of e-Payment adoption

Prior research on TAM regarding the e-Payment adoption based on SMEs owners perspectives reveals that attitude is perceived as a prominent for individual intentions towards performing underlying behavior especially during early stages of technology adoption (Bailey, et al., 2017, pp. 626-640; Iqbal, Bhatti and Khan, 2020, pp. 933-944; Kar, 2021, pp. 1-21; Widayat, Masudin and Satiti, 2020, pp. 1-14). For instance, Widayat et al., (2020, pp.1-14) found a significant and positive relationship between consumer attitude and intention towards using the e-money payment service in Indonesia. The attitude towards using e-Payment includes: 1) Raising customer's brand-image perception towards business with modernity of technology, 2) Increasing payment transparency, 3) Creating customer experience in online payment, 4) Being able to formulate as business strategy and continually building up on the idea of financial transaction strategy, 5) Preparing and supporting government policies related to financial transaction, and 6) Staying up to date on the current trends in consumer behavior. Additionally, ATT, BI and ActUse were all associated with continuance intention. Previous research indicated that there will be correlations among PU, PEOU, ATT, BI and ActUse for e-Payment success (Tella and Abdulmumin, 2015). Hence, the proposed hypotheses are:

H5: ATT directly impacts BI of e-Payment adoption; and

H6: BI directly impacts ActUse

Based on the variables in the TAM theory, the model depicted in Picture No. 1 is proposed as shown below.



Picture No. 1 A proposed model of e-Payment adoption by SMEs e-Payment adoption by SMEs (developed from David, 1986)

Methods

This research study leans on a quantitative research. The collected data for testing the model were collected by the convenience sampling approach focusing on SMEs (i.e. fewer than 200 employees and 200 million baht with fixed assets) (OECD, 2020) that have already adopted and implemented e-Payment system. The respondents obtained from the survey during 4 months were owners or managers of SMEs. The survey instrument design of this study was developed from extant literature and a pilot test of a questionnaire to be conducted before the survey was administered.

The collected questionnaires were verified for completeness and validity by using a sample size calculation based on Yamane (1973, pp. 727-728) approach which represents around 394.94 respondents stemming from the overall 31,260 SMEs located in Phitsanulok (OSMEP, 2016, p. 31). The survey question instruments also examined reliability by using the Cronbach Alpha Coefficient for each of the dimensions and for the total instrument (α =0.78) (Cronbach and Snow, 1977). On this basis, the survey was administrated in the form of self-administration. After eliminating an incomplete survey, a total of 413 were obtained from the respondents (only 380 already had e-Payment services, and 33 did not) at the end of the data collection. The data from survey questions were analyzed by using descriptive and inferential statistic which were percentage, mean, standard deviation, Pearson Chi-square test and regression analysis for assessing the association between factors.

Results

A total of 413 respondents were initially analyzed by descriptive statistics showing a characteristics of respondents, including age of respondents, positioning, business size, sector, age of business operation, average revenue of business per month, type of e-Payment presence in their business. As detailed in Table No. 1, the findings show that the biggest group of respondents' was owners with average 30-39 years of age.

Service wholesale/retail sectors were most reported as a main sector of respondents with currently used e-Payment. Overall, the

age of business from respondents reported was over 5 years, and the income of business was approximately 30,000 to 50,000 baht per month. The 380 SMEs that already adopted e-Payment (see Table No. 2) reported that the Types of e-Payment currently used the most in SMEs are QR code payment via mobile banking (83.29 per cent) followed by ATM (52.78 per cent) credit/debits cards (22.28 per cent), and Internet banking third money wallet (19.61 per cent) respectively. The use of Social Media (SM) platform as a channel for payment was Line (86.84 per cent), Facebook Messenger (73.68 per cent), Facebook official fan page (70.79 per cent), Instagram (12.37 per cent) and so forth (9.04 per cent). The top four official Thai banks regarding the wallet and transfer money payment usage were KrungThai Next, K- Plus, SCB Easy and Bualuang iBanking. An average for the frequency of payment transaction by SMEs approximately 31 to 50 times per month.

Further analysis by using Chi-square test **(i.e. Business characteristic impacts on PU of e-Payment)** indicated that there will be the association of business size, sector, market type, positioning, age of respondents, average business income and frequency transaction of business — towards the PU as shown at Table No. 3.

Table No. 1 Characteristic of 413 respondents

Characteristics	N	%	Characteristics	N	%
Size of business			**Positioning**		
Micro (1-5 ppl.)	232	56.20	Owner	304	73.60
Small (6-30 ppl.)	172	41.60	Manager	109	26.40
Medium (more than 30 ppl.)	9	2.20	**Overall**	**413**	**100**
Overall	**413**	**100**	**Age of respondent**		
Business sector			20-29 years	62	15.01
Production	68	16.50	30-39 years	158	38.25
Customer service	117	28.30	40-49 years	107	25.90
Travel/Hospitality	33	8.00	Over 50+ years	86	20.85
Health/Medical	20	4.90	**Overall**	**413**	**100**
Wholesale/Retails	109	26.40	**Age of business**		
IT/Media/Communication	37	9.00	Less than 3 years	70	16.94
Financial	15	3.61	Between 3 to 5 years	74	17.91
Education/Training	14	3.39	Between 5 to 10 years	119	28.81
Overall	**413**	**100**	More than 10 years	150	36.31
			Overall	**413**	**100**
Type of market			**Average business income per month (Baht)**		
B2C	347	84.00	Less than 30,000	42	10.16

Characteristics	N	%	Characteristics	N	%
B2C & B2B	53	12.83	Between 30,001 to 50,000	141	34.14
B2C, B2B & B2G	13	3.17	Between 50,001 to 100,000	109	26.39
Overall	**413**	**100**	More than 100,000	121	29.9
			Overall	**413**	**100**

Table No. 2 Characteristic of 380 respondents that already adopted e-Payment system

Payment channels	N	%	QR (code) Payment via Mobile banking	N	%
Cash	411	99.52	KrungThai Next	205	59.59
QR(code) Payment	344	83.29	K- Plus	159	46.22
Bank/ATM transfer	218	52.78	SCB Easy	124	36.05
Debit/Credit card	92	22.28	Bualuang iBanking	69	20.06
Internet banking	70	16.95	KMA	36	10.47
Third party wallet	11	2.66	GSB Pay	36	10.47
N = 413 respondents			TMB	14	4.07
Social media channels			**N = 344 respondents (only using QR code)**		
Line	330	86.84	**Average for the frequency of payment transaction**		
Facebook Messenger	280	73.68	Less than 10 times a month	4	1.05
Facebook	269	70.79	Between 10 to 30	112	29.48
Instagram	47	12.37	Between 31 to 50	143	37.63
Twitter	10	2.63	More than 50 times a month	121	31.84
Blog	9	2.37	**Factors influencing e-Payment usage**		
YouTube	4	1.05	Customers	368	96.84
Pinterest	4	1.05	Themselves	302	79.47
Others	3	0.98	Competitors	138	36.32
			Friends (relatives)	67	17.63
Frequency of overall based on 380 respondents that already use e-Payment services					

Unsurprisingly, age of business was not reported as a significant factor. Specifically, business size (df=2, $\chi 2$ =3.047*), type of market (df=2, $\chi 2$ =4.21**), and average income of business per month (df=3, $\chi 2$ =9.26***)—perceived the benefits of e-Payment services in terms of calculating correct change (i.e not having enough cash to give the change). Apart from that, age of respondents also reported the association with the intention of using e-Payment to keep track of customer payments history for marketing purposes (df=3, $\chi 2$

=4.98*). The perception of making it easier for consumers to purchase products (transaction speed) via the use of e-Payment associated with business sector (df=7, $\chi 2$ =3.26*) and corresponded to the age of respondents (df=3, $\chi 2$ =3.36*) and frequency of payment transaction (df=3, $\chi 2$ =5.52*). This implies that the sector with a higher frequency of payment transaction is more likely to adopt new payment techniques in the future such as e-Payment channels; moreover, age of respondents could perceive the benefits stemming from government policy (i.e. The government's financial aid scheme for circulating cash in the local economy during Covid-19 pandemic) in terms of the readiness to adopt such mobile payment services for customer payment by using government applications. Also, the findings show that the benefits of e-Payment services in regards to reduced risks of payment transaction, more transparent and seamless currency exchange were significantly associated with type of market (df=2, $\chi 2$ =3.06*) and positioning of respondents (df=3, $\chi 2$ =2.91*) particularly the owner of business. This implies that from owners' perspectives, the use of e-Payment enables businesses not only to save time and money in transaction charges and increase sales but also to gain a competitive advantage over competitors by providing better experience to their customers and prospects.

The findings in Table No. 3 also reveal both average business income per month (df=3, $\chi 2$ =9.67***) and frequency of payment transaction (df=3, $\chi 2$ =10.45***)— that were significantly associated with the PU in relation to safety (i.e. no need to keep a large amount of money in workplace and prevention of financial crime due to embezzlement by employees or due to negligence of employees). Unsurprisingly, businesses with high income monthly and high transaction volumes (df=3, $\chi 2$ =9.67***) is more likely to use a certain type of e-Payment services available and additional options to be made available to their business context and current market type.

Table No. 3 Factor affecting the perceived usefulness of e-Payment usage by SMEs (N=380 as 'very high' or 'high' in important)

	N	Accuracy and reducing spare changes	Ease with transaction speed	Reducing financial crime risks (safety)	Tracking customer payment	Transparency and seamless payment
Business size						
Micro (1-5 ppl.)	212	181 (85.38)	147 (69.34)	198 (93.40)	142 (66.98)	199 (93.87)
Small (6-30 ppl.)	159	133 (83.65)	123 (77.36)	151 (94.97)	122 (76.73)	151 (94.97)
Medium (fewer than 200 ppl.)	9	9 (94.71)	9 (80.12)	9 (90.15)	9 (85.78)	9 (92.15)
F (df=2)		**3.047***	2.426	0.611	**3.953***	0.524

	N	Accuracy and reducing spare changes	Ease with transaction speed	Reducing financial crime risks (safety)	Tracking customer payment	Transparency and seamless payment
Business sector						
Production	63	45 (71.43)	49 (77.78)	60 (95.24)	43 (68.25)	59 (93.65)
Customer service	104	92 (88.46)	82 (78.85)	95 (91.35)	82 (78.85)	98 (94.23)
Travel/Hospitality	33	27 (81.82)	23 (69.70)	30 (90.91)	26 (78.79)	31 (93.94)
Health/Medical	17	15 (88.24)	9 (52.94)	16 (94.12)	8 (47.06)	15 (88.24)
Wholesale/Retails	100	91 (91.00)	81 (81.00)	97 (97.00)	74 (74.00)	95 (95.00)
IT/Media/Communication	35	29 (82.86)	22 (62.86)	34 (97.14)	24 (68.57)	34 (97.14)
Financial	15	12 (80.00)	9 (60.00)	15 (100.00)	12 (80.00)	15 (100.00)
Education/Training	13	12 (92.31)	4 (30.77)	11 (84.62)	4 (30.77)	12 (92.31)
F (df=7)		1.585	**3.266***	2.590	2.477	2.023
Type of market						
B2C	316	276 (87.34)	233 (73.73)	298 (94.30)	277 (71.84)	298 (94.30)
B2C & B2B	51	35 (68.63)	35 (68.63)	48 (94.12)	36 (70.59)	48 (94.12)
B2C, B2B & B2G	13	12 (92.31)	11 (84.62)	12 (92.31)	10 (76.92)	13 (100.00)
F (df=2)		**4.218****	0.276	1.251	1.590	**3.068***
Positioning of respondents						
Owner	275	239 (86.91)	198 (72.00)	260 (94.55)	193 (70.18)	260 (94.55)
Manager	105	84 (80.00)	81 (77.14)	98 (93.33)	80 (76.19)	99 (94.29)
F (df=1)		**3.504***	0.448	**2.911***	1.351	**2.916***
Overall	**380**					
Age of respondents						
20-29 years	67	53 (92.98)	48 (84.21)	53 (92.98)	45 (78.95)	56 (98.25)
30-39 years	151	139 (92.05)	112 (74.17)	140 (92.72)	112 (74.17)	143 (94.70)
40-49 years	104	80 (76.92)	76 (73.08)	100 (96.15)	76 (73.08)	100 (96.15)
50 years and older	68	51 (75.00)	43 (63.24)	65 (95.59)	40 (58.82)	60 (88.24)
F (df=3)		**6.020****	**3.361***	1.001	**4.980****	1.633
Age of business						
Less than 3 years	64	60 (93.75)	50 (78.13)	61 (95.31)	49 (76.56)	64 (100.00)
3 – 5 years	67	53 (79.10)	44 (65.67)	61 (91.04)	47 (70.15)	61 (91.04)

	N	Accuracy and reducing spare changes	Ease with transaction speed	Reducing financial crime risks (safety)	Tracking customer payment	Transparency and seamless payment
5 – 10 years	115	101 (87.83)	86 (74.78)	110 (95.65)	92 (80.00)	111 (96.52)
More than 10 years	134	109 (81.34)	99 (73.88)	126 (94.03)	85 (63.43)	123 (91.79)
F (df=3)		1.133	0.241	0.075	1.249	1.132
Average business income (monthly)						
Lower than 30,000 baht	28	16 (57.14)	18 (64.29)	26 (92.86)	20 (71.43)	25 (89.29)
30,001-50,000 baht	132	107 (81.06)	95 (71.97)	120 (90.91)	91 (68.94)	123 (93.18)
50,001-100,000 baht	105	90 (85.71)	71 (67.62)	102 (97.14)	70 (66.67)	101 (96.19)
more than 100,000 baht	115	110 (95.65)	95 (82.61)	110 (95.65)	92 (80.00)	110 (95.65)
F (df=3)		**9.266*** **	2.030	**9.674*** **	1.656	2.258
Frequency of payment transaction (monthly)						
Fewer than 10 times	4	3 (75.00)	1 (25.00)	4 (100.00)	2 (50.00)	4 (100.00)
10-30 times	112	76 (67.86)	73 (65.18)	99 (88.39)	75 (66.96)	103 (91.96)
31-50 times	143	127 (88.81)	105 (73.43)	138 (96.50)	108 (75.52)	135 (94.41)
More than 50 times	121	117 (96.69)	100 (82.64)	117 (96.69)	88 (72.73)	117 (96.69)
F (df=3)		**14.612*** **	**5.525** **	**10.450*** **	1.393	2.619
Overall	**380**					

*p < 0.05; **p < 0.01; ***p < 0.001

Analysis of the factors affecting ActUse of e-Payment usage.

The means of the factors affecting ActUse (Actual use), include PU (Perceived Usefulness), PEOU (Perceived Ease of Use), ATT (Attitude towards using) and BI (Behavior Intention). Table No. 4 reports the means for each factor and Pearson correlation—together with using factor analysis techniques to reduce numerous variables to a few factors (Tabachnick and Fidell, 2007) and finally using Cronbach's Alpha coefficient to assess the reliability.

Table No. 4 Mean of each factor and factor Analysis and Pearson correlation among variables

Factors	Mean	Cronbach's alpha
PU	4.269	0.739
PEOU	4.307	0.774
ATT	4.315	0.779
BI	4.248	0.819

Actuse	4.401	0.796

Pearson correlation coefficient among variables

	Mean	SD.	PU	PEOU	ATT	BI	ActUse
PU	4.269	.497	1.000				
PEOU	4.307	.512	.732**	1.000			
ATT	4.315	.459	.739**	.721**	1.000		
BI	4.248	.523	.744**	.673**	.749**	1.000	
ActUse	4.401	.483	.718**	.757**	.749**	.767**	1.000

Table No. 5 Results of Co-efficient of the prediction variables of e-Payment adoption

H1: Coefficientsa (PEOU → ATT)

	B	Std. Error	Std. Coefficients Beta	t	Sig.
(Constant)	1.515	.137		11.070	.000
PEOU	.651	.032	.728	20.607	.000

a. Dependent Variable: ATT

H2: Coefficientsb (PEOU → PU)

(Constant)	1.270	.142		8.938	.000
PEOU	.698	.033	.740	21.325	.000

b. Dependent Variable: PU

H3: Coefficientsc (PU → ATT)

(Constant)	1.379	.134		10.290	.000
PU	.689	.031	.752	22.095	.000

c. Dependent Variable: ATT

H4: Coefficientsd (PU → BI)

(Constant)	.868	.144		6.007	.000
PU	.796	.034	.775	23.695	.000

d. Dependent Variable: BI

H5: Coefficientse (ATT → BI)

(Constant)	.654	.161		4.070	.000
ATT	.836	.037	.760	22.601	.000

e. Dependent Variable: BI

H6: Coefficientsf (BI → ActUse)

(Constant)	1.481	.121		12.221	.000
BI	.690	.028	.784	24.400	.000

f. Dependent Variable: ActUse

Assessment of model and hypothesis testing

In regards to hypothesis testing, the model was initially undertaken to determine the relationship among variables. According to Table No. 5 the findings show that PEOU positively impacted ATT (Beta = 0. 651, t = 20.607) and PU (Beta = 0. 698, t = 21.325) as expected; thus, the proposed H1 and H2 are accepted. Then, the results of PU also positively impacted ATT (Beta = 0. 689, t = 22.095), particularly PU that had a direct and significant "positive impact" on BI (H4: Beta = 0. 796, t = 23.695); thus, the proposed H3 and H4 are accepted. Followed by findings analysis from H5 and H6 indicated that ATT positively impacted BI (H5: Beta = 0.836, t = 22.601) and BI positively impacted ActUse (H6: Beta = 0.690, t = 24.400). Thus, the proposed H5 and H6 are also accepted.

Table No. 6 Multiple regression on factor affecting e-Payment system adoption

Model Summary[b]

R	R Square	Adjusted R Square	Std. Error of the Estimate
.877a	.770	.767	.22605

a. Predictors: (Constant), BI, PEOU, ATT, PU

b. Dependent Variable: ActUse

Analysis of Variance

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	62.658	4	15.664	306.55	.000b
Residual	18.753	367	.051		
Total	81.411	371			

a. Dependent Variable: ActUse

b. Predictors: (Constant), BI, PEOU, ATT, PU

Table No. 7 Co-efficient of the prediction (N=380). Significant at 0.001

	Unstandardized Coefficients[a]		Standardized Coefficients[a]		
	B	Std. Error	Beta	t	Sig.
(Constant)	.509	.116		4.385	.000
PU	.068	.042	.072	1.642	.101
PEOU	.378	.037	.413	10.185	.000
ATT	.187	.045	.183	4.191	.000
BI	.277	.038	.309	7.309	.000

a. Dependent Variable: ActUse

Table No. 6 summarizes the overall results with a predictive variables, given that the model of the empirical data indicates that the R square = 0.77, R value adjusted = 0.76, and the correlation between the factor values, R =0.877. Meanwhile, the analysis of variance performed on multiple regression yielded an F-ratio value of 306.55. This was significant at 0.001 levels. The R Square results explained 77% variance of the dependent variable by independent variables. Apparently, all proposed factors in this study jointly determine SMEs owners /managers' intention of use and satisfaction with the e-Payment system. Meanwhile, Table No. 7 demonstrates each of the independent variables (factors) that made a significant prediction of e-Payment system satisfaction. Arranging the values in order of magnitude of the prediction to e-Payment owners/managers' satisfaction, perceived ease of use (PEOU) made the most significant prediction with Beta = 0.378, t = 10.185. The next predicting value was indicated by behavioral intention to use (BI) (Beta = 0.277, t = 7.309). This is followed by attitude towards using (Beta = 0.187, t = 4.191). However, only PU was not considered a factor that impacted the ActUse. This suggests that most of the factors contribute significantly to SMEs owners and managers' satisfaction with e-Payment system; thereby provides answer to the research question in this study. Based on Picture No. 1 presented above, the factors determining SMEs's E-Payment utilization include PEOU, BI and ATT, used as independent variables by employing an ordered logistic regression model stated as follows: The general form of estimated multiple regression equation is:

$Y = a + b1x1 + b2x2 + b3\ x3 + b4\ x4$

a = Constant

b = Unstandardized Coefficients

x_n = Independent variables

ActUse = 0.509 + 0.378 PEOU + 0.277 BI + 0.187ATT

Finally, analysis of multiple regression produces the standardized regression equation as follows:

$Z = \beta_1 Z_1 + \beta_2 Z_2 + \beta_3 Z_3 + \beta_4 Z_4$

Z = Dependent variable.

β = Standard Coefficient

Z_n = Independent variables included in the study area.

ActUse = 0.413PEOU + 0.309BI + 0.183ATT

Discussion

Based on the findings of the study, the external factors including business size, sector, type of market, age of respondent, average business incomes and frequency fiscal transaction of business—were revealed as critical factors affecting the perception of benefits and usefulness by SMEs top management. Surprisingly, age of business was not reported as a dominant factor in this study. Such finding is in accordance with recent studies on e-Payment system adoption in other countries that also found that characteristics of business were significant in terms of e-Payment adoption (Humbani and Wiese, 2018, pp. 409-429; Kaur, et al., 2020, pp. 1-11; Mustapha, 2018, pp. 1-14; Thilagavathy and Santhi, 2017, pp. 1-4; Tiwari and Singh, 2019, pp. 10-15). In particular, previous research conducted by Joshua and

Nivetha (2018) reveals that the business sector especially retails had an effect on the e-Payment services adoption. This could be because most participants in this study were in retails/wholesales sector which is customer service based and delivered in manner. However, according to previous research, Barkhordari, et al. (2017, p. 97) argued that not only business demographic attributes significantly determined the probability of e-Payment usage, but other factors such as individual experiences towards other cashless technology innovations and the sophisticated of mobile and computer usage also had impacts. Even though this research study was not based on the educational and experience inputs of SMEs's owner, it cannot be denied that education in IT along with owners' past experience in working with similar systems, influences the kind of expectations a user has from e-Payment systems. There is, therefore, no doubt about the perception of e-Payment benefits with easily usable and user-friendly interfaces resulting from the age of owners/managers in this study. This implies that regardless of age, SMEs with digital environment triggered by digital technology—the functional and compatibility properties with the business processes would be predominant factors on the engagement of such technologies.

The results from the testing of the hypotheses derived from the research model reveal that perception of benefits, ease of use, attitude and intention to adopt E-Payment system have positively and strategically significant relationship with the actual use of e-Payment services. In line with many empirical research findings in various countries (Lai, 2016, pp. 111-122; Salloum, et al., 2019, pp. 68-83), the results in this study suggest that PU and PEOU have a significant positive relationship with the SMEs owner attitude and intention to use e-Payment systems. Based on the business owners' perspectives from prior research conducted by Kendall, Lyon and Higgins, (2012) in particular, one of the benefits of adopting e-Payment (by mobile money usage) is that it enables business to promote such adoption along the supply chain. The research conducted by Tiwari and Singh (2019) also reveals that a long-term business with established processes and reliable networks, were more likely to uptake e-Payment methods. This is because a complexity of their financial transaction systems. It requires a financial solution mechanism designed for customers' payment on seamless transaction convenience with information speed. As a result, the reduction of transaction costs urges higher requirements and results in the split of supply chain and production outsourcing.

Interestingly, the constructs of PU and ATT also have a positive predictor of BI. This finding supported previous research (Ahmad, Bhatti and Hwang, 2020, pp. 503-519; Fan, et al., 2018, pp. 524-540; Salloum, et al., 2019, pp. 68-83) suggesting that the perception of benefit stemming from direct and indirect advantages. Tangible benefits could be seen in the form of transaction speed, accuracy, transparency and security; while, the business opportunity (Government's policy), increased customer information (for marketing strategy purposes to develop long term relationship)

gained by using e-Payment can be seen as intangible benefits.

Regarding the relationship of intention to adopt and actually use e-Payment, the findings of this research are significant and correspond with previous findings of academics in other countries (Junadi and Sfenrianto, 2015, pp. 214-220). One explanation could be that over the years smart phone related technologies such as applications— have become closely related to everyday activities of today's generation, especially young adults. Once they have become business owners; consequently, the attitudes towards such technologies and the usefulness people perceive may have evolved in recent times. Moreover, in the new era of business transition, most SMEs are using advanced technology supported by digital technologies in their daily business activities, and thereby their staff are well skilled in new technological platforms. The intention can be determined by the perception of willingness to use such technologies (Bezhovski, 2016, pp. 127-132).

Conclusion

The purpose of this research study is to explore the external factors related to the decision of adoption of e-Payment system by SMEs located at Business District Areas (CBD) in Phitsanulok; —and to investigate what factors directly impacted the actual use of e-Payment system by SMEs. The findings found that the size of the business, the business sector of the business, age of business operation and activity in high-frequency trading or financial transaction business were significant factors towards the perception of benefits of e-Payment usage by SMEs, Phitsanulok.

The study also tested a revised TAM that incorporated external factors (business characteristics), Actual use (ActUse), Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Attitude towards using (ATT), and Behavior Intention (BI) in an assessment of e-Payment adoption in the SMEs located in Phitsanulok. The focus was on the factors related to such initiatives adoption based on top management perspectives. The majority of the hypotheses were supported by the findings. All the three factors jointly predictive of the SMEs' satisfaction made 77% of e-Payment actual use including the ease of use, attitudes and behavioral intention to use. However, perceived benefits by owners was not found to be significantly associated with the actual use of e-Payment adoption in this study. The novel contribution of this research is to provide a strategic lens to business owners regarding which factors will drive any digital e-Payment adoption initiative's success and also attempts to perform detailed insight analyses into the perception, attitudes and behaviors of individual towards any new technological setting in the SME business.

Future Research

There are limitations in this research, which present future research opportunities. Firstly, this research used a convenience sample of SMEs located in one specific area. Since many among this group of SMEs located in the innercity area, the findings from this group cannot be generalized to the entire Phitsanulok

province and others. Secondly, even though the sample in this study can be considered statistically adequate, the model should be tested on a larger number of samples so that the results are more robust. Future studies, therefore, should investigate the various kinds of factors that influence e- Payment adoption, such as practicality, trust, barrier, time efficiency and stakeholder factors. This could lead to a new dimensions or indicators to measure the success of e-Payment adoption by SMEs. Also, the investigation of various kinds of variables by using qualitative research methods could be added to future models to enhance our understanding of factors that impact e-Payment adoption.

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