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FACTORS INFLUENCING THE INTENTION TO USE CRYPTOCURRENCY PAYMENTS: AN EXAMINATION OF BLOCKCHAIN ECONOMY

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Abstract

In summary, this study has applied TAM model to examine cryptocurrency payment adoption in Taiwanese hotels, examining the factors that are more likely to affect the behavioral intent. The empirical results suggest that intent to adopt cryptocurrency payments is affected by perceived usefulness, and perceived ease of use of these payments. In turn, perceived usefulness is affected by trust towards these payments. Interestingly, perceived usefulness was not shown to be significantly affected by different types of risks associated with cryptocurrency payments, including financial risk, technological risk, and social risk. Perceived ease of use, in turn, is affected by convenience of cryptocurrency payments; and is not shown to be significantly affected by trust.

Keywords: cryptocurrency payment, cryptocurrency acceptance, technology acceptance, blockchain economy.

Introduction

Over the last decade, new technology and payment systems have altered business activities in various ways (Cabanillas et.al, 2014). Adoption and implementation of Internet, social networks, mobile and electronic payments, block chain technology and digital currencies are a driving force and strategic asset for many organizations. Hospitality industry is particularly proactive towards acceptance and use of new technologies (DiPietro and Wang, 2010). Technology contributes to hospitality organizations performance, competitive advantage and success (Nyheim et al., 2004; Wang and Qualls, 2007). There is a lot of research on technology adoption and diffusion in hospitality industry (Heart and Pliskin, 2002; DiPietro and Wang, 2010). As world is as interconnected as ever and travelling experience is a priority for many people, especially for younger generation acceptance and adoption of new technology has become an important aspect for hospitality industry businesses. Leisure and business travellers are spending more of their budget on international trips and it is important to keep up with technology and guest demands in order to stay competitive (Paul, 2005). Digital technology savvy millennial generation of consumers (Lou and LI, 2017) are adept at the use of new technology and are eager to bring that into their travelling experiences (DiPietro and Wang, 2010).

Digital currencies, such as Bitcoin, Etherium, Litecoin, Ripple and hundreds of others, have emerged as an alternative form of money, mostly unregulated and unbound to traditional money (Gilbert and Loi, 2018). There are over 900 cryptocurrencies with an exstimated value of USD 342 billion, which is around 0.3 percent of Global GDP (WorldCoinIndex, February, 2018). Cryptocurrencies represent new payment technology, which allows payers and payees to directly

send value to each other electronically and anonymously without the need to use the services of trusted third parties, like financial institutions (ex. banks) (Nakamoto, 2008). Digital currency is both a virtual and a cryptocurrency (with computer encryption protecting coin supply and ownership (Gilbert and Loi, 2018). Cryptocurrency is defined as currency that is stored and transferred electronically (Wagner, 2014) and is a medium of exchange that rely on cryptography, in order to secure transactions and control the creation of new units (Christou & Kassianidis, 2002; Roussou and Stiakakis, 2016). Throughout this paper, we use term cryptocurrency (virtual, digital, encrypted). Blockchain technology and cryptocurrencies, with Bitcoin being one of the most famous one, is the new business model which aims to compete with traditional financial services (Lou and LI, 2017) and could even affect the functioning of the monetary system (Halperin, 2013; Stevens, 2017). Decentralized cryptocurrencies have the potential to drastically change the existing retail system and it is important to understand factors that influence their adoption (Jonker, 2018).

Technology innovations may help organizations achieve competitive advantage, improves performance and competitiveness (Wang and Qualls, 2007; Roussou and Stiakakis, 2016). It has been stated that perceived relative advantage positively affect intention to use innovation (Shih, 2007; Lee, 2007). For example, technology adoption was found to add value on guest service and customer relationship management in hospitality industry (DiPietro and Wang, 2010), reduce costs (Folkinshteyn and Lennon, 2007), increase competitive advantage (Cho and Olsen, 1998; Morone, 1989; Nyheim et al., 2004) and customer and competitor orientation (Han et al., 1998). Businesses, including hospitality industry may achieve competitive advantage via the provision of cryptocurrency payments to customers and the issue associated with appropriate cryptocurrency payment usage is the important research topic for exploration (Roussou and Stiakakis, 2016). Acceptance of digital currencies as an additional payment option could be a marketing tool and help companies to stand out (Roussou and Stiakakis, 2016). There is a need to investigate whether digital currencies will be accepted and adopted as a trading instrument with or without traditional currencies and the conventional payment systems (Roussou and Stiakakis, 2016). Younger generation of travellers have an expectation of using more technology in their business interactions, examples include commonplace of having television, wireless connection in hotel rooms (DiPietro and Wang, 2010) as well as being able to book and pay for the hotel room online.

The adoption of cryptocurrency payment is increasing rapidly, with companies such as Microsoft, Paypal, EBay, Dell, and Expedia now accepting Bitcoin payments (Ussel, 2015). Rapid advancement of cryptocurrency market has a strong potential on business and individuals payment transactions choice behavior. This paper focuses on a recent innovation for which acceptance and adoption behavior is poorly understood- cryptocurrency payment. The purpose if the present study is threefold. First, authors aim to provide insight into the factors that influence hospitality industry organizations to express intention to use cryptocurrency payment. Second, from the theoretical perspective, we examine widely used Technology Acceptance Model (TAM) to develop and test an integrated model which is better able to predict hotel owners intention to use an innovation technology in the form of cryptocurrency payment. Third, this research integrates strong predictor of technology acceptance external variable- perceived security, which considered a strong predictor for new payment technology adoption (Folkinshtein and Lennon, 2017; Khalilzadeh et al. 2017; Liao and Cheung, 2012; Cheng et al. 2006) into the established model. We suggest that perceived security is crucial to understanding and predicting adoption of cryptocurrency payment, however it is not yet explored in the literature in the context of cryptocurrency payment or hospitality industry.

There are paucity of papers regarding cryptocurrency payment adoption and usage (Jonker, 2018; Polasik et al., 2015; Schuh and Shy, 2015; Tsanidis et al. 2015; Silinskyte, 2014). There are no studies available on the adoption of cryptocurrency payment among hospitality industry. This paper fills that gap. Another novelty is that this paper contributes to new payment technology adoption and hospitality industry related research by examining integrated technology adoption model in Taiwan hotel industry. Taiwan provide a good setting for this research as it has a well-developed technological infrastructure and is welcoming to cryptocurrency and blockchain technology.

The paper is structured as follows. The first section introduces overview of technology adoption models and factors influencing adoption decisions of new payment technology. Second, we provide the background of cryptocurrency payment technology. We then develop hypothesis, explain methodology and data collection and conclude with discussion of the findings and their implications for theory and practice.

Literature Review

Theoretical background / Technology acceptance theories

There are several social psychology based classical models of behavioral decisions and behavioral intentions which analyze people's behavior when faced with something novel (Pavloy, 2002a). Theory of reasoned actions (TRA) is a general model explaining person's behavior based on the relationship between the variables beliefs-attitude-intention-behavior (Fishbein and Ajzen, 1975). This model takes into consideration the attitude towards behavior and the person's subjective norm as an explanation factors for intention. TRA became a base for Technology acceptance model (TAM) which aims to explain information technology and information systems adoption behavior (Davis, 1989; Davis, Bagozzii and Warshaw, 1989, Munoz, 2008). TAM it is a well-established, influential and widely used model of IS usage and IS acceptance behavior and is applied to a variety of information technology and information systems studies (Lymperopoulos and Chaniotakis, 2005; Kim, Mirusmonom and Lee, 2010,) such as e-mail, spreadsheets, microcomputer usage, group support systems, expert systems, e-payment, mobile payment, block chain technology (Chen, 2008; Lin and Nguyen, 2011; Kim et al., 2010; Cabanillas et al., 2014; Lou and Li, 2017). TAM states that adoption behavior is determined by the intention to utilize a particular system determined by the perceived usefulness and ease of use. TAM states that information technology users act rationally during their decision whether to use technology or not. User's intention to use new technology depends on their beliefs of perceived usefulness (PU) and perceived ease of use (PEU) of the technology. PU is defined as the degree to which a person perceives that adopting the system will boost his/her performance. PEU is defined as the degree to which a person believes that adopting the system will be effortless. TAM model is relevant as it provides a framework by which the effect of the external variables on a system usage can be assessed. TAM became the base for several models of innovation technology acceptance. For example TAM was extended to TAM2 which includes social and organizational variables (subjective norm, image, job relevance, output quality, result demonstrability) which are shown to have direct impact on PU (Venkatesh and Davis, 2000). UTAUT (Venkatesh, Morris, Davis and Davis, 2003) proposed four key constructs (performance expectancy=PU, effort expectancy=PEU, social influence and facilitation condition) as direct determinants of usage intention and behavior and introduced moderating constructs (gender, age, experience and voluntariness of use) for the impact of four key constructs on usage intention and behavior. TAM and UTAUT Models continued to be explored and improved in new research (Luarn and Lin, 2005).There are TAM3 (Venkatesh and Bala, 2008), MOPTAM- Mobile Phone Technology Acceptance Model (Renaud and Biljon's, 2008).

Research on new technology acceptance by different user types is ever more relevant and necessary in the era of disruptive innovation technologies. TAM provide a core elements and could be developed and expanded differently in line with the IT and IS innovations (Venkatesh and Morris, 2000; Lin and Nguen, 2001).

There are several primary constructs that have been recognized to strongly influence technology acceptance in the past research. The most important predictors of innovation adoption are individual differences (Zmud, 1979, Nelson, 1990, Agarwal and Prasad, 1999; Venkatesh, 2000, Mallat, 2007; Ondurus and Pigneur, 2006), new technology characteristics (Ostlund, 1974; Tornatzky and Klein, 1982; Gatignon and Robertson, 1985; Davis, 1989; Moor and Benbasat, 1991; Rogers, 1995) and social influences (Fishbein and Ajzen, 1975; Moore and Benbasat, 1991; Venkatesh and Davis, 2000; Lucas and Spitler, 2000; Venkatesh and Baia, 2008; Fennolar and Cuestas, 2010). In relation to financial interactions and new payment system acceptance **perceived Security (security, risk, trust)** is especially relevant in the context of financial transactions (Khalilzadeh et al., 2017) and would be of critical importance for the present cryptocurrency payment adoption study.

Cryptocurrency Payments

Established payment card networks (e.g., Visa and Mastercard) and a broad range of so-called ―alternative payments‖ including eWallets (e.g., Paypal, Google Checkout, and WebMoney), direct debit systems (typically via ACH, such as eBillMe), money transfer systems (e.g., Moneygram) etc . are all explicitly identify the payer in transactions, and are centrally or quasicentrally administered (Pomarole et al., 2013). In other words the user provides his account information to the merchant, and trusts the merchant and the processor to withdraw only the agreed-upon (Folkinshtein and Lennon, 2017). On the other hand cryptocurrency payment is pseudo anonymous, it do not explicitly identify the payer or the payee, transactions are irreversible but requires third party, a global peer-to-peer network, mediation which makes all transactions completely transparent (Pomarole et al., 2013). Cryptocurrency is a ―push-based‖ payment system—the user creates a transaction transferring a

specific amount to the merchant and without specific further action on the part of the user in creating a new transaction, no other amount can be taken. To make an analogy to the world of cash, with cryptocurrency you take some cash out of your wallet and hand it to the merchant. With the bank/credit card system, you give your wallet to the merchant and ask him to take out the amount you agreed upon, while you turn your back and do not look (Sigala & Christou, 2006; Folkinshtein and Lennon, 2017).

Blockchain technology and cryptocurrency and widely recognized by the scientific and business community as a pioneering technological innovation which contributes to the shaping of a new market and network (Roussou and Stiakakis, 2016). On the one hand cryptocurrency, such as Bitcoin has been negatively associated with use in the illicit dark web commerce sites (Barratt, 2012; Trautman, 2014) on the other hand Bitcoin (every transaction is recorded on the publicly viewable block chain, the legitimacy of transactions is verified by comparing the transmission with the previous history of transactions as recorded on the block chain, ensuring provenance and validity) is by design aims to increase trust (Brito and Castilo, 2013; Nakamoto, 2008a,b; Folkinshtein and Lennon, 2017). Growing popularity of crypto currencies is influenced by decreasing public confidence and trust in the credibility of financial institutions as well as leading to new ways of transactions, without third party mediation (Roussou and Stiakakis, 2016) which is very popular among millennial generation (Lou and LI, 2017). For example Bitcoin currency is considered the first application of block chain innovation which gradually changes the current organization and structure of the market and the financial system, displacing previous value systems (Antonopoulus, 2014).

Cryptocurrency payment involves fast, secure, anonymous, person to person payment via internet, without time or space limitation. As block chain technology increases in popularity, cryptocurrency payment continue to facilitate secure electronic commercial transactions between organizations or individuals. This paper focuses one the important innovation that is steadily gaining popularity for which adoption processes are not yet understood- cryptocurrency payment. Block chain is a decentralized public transaction ledger, it is transparent and immutable technology which has a potential of fast, cheap, peer-to-peer financial transactions (Folkinshtein and Lennon, 2017). Cryptocurrency, such as Bitcoin is an entirely digital distributed currency, not dependent on any particular national currency or geographic location (Folkinshtein and Lennon, 2017).

Research Model and Hypothesis

Previous research has identified three principal external variables of the TAM - namely individual differences, technology characteristics and social influence (Davis, 1989; Moor and Benbasat, 1991; Agarwal and Prasad, 1999; Venkatesh and Davis, 2000; Venkatesh and Baia, 2008**).** There are several primary constructs that have been recognized to strongly influence technology acceptance in the past research. The most important predictors of innovation adoption are individual differences (Zmud, 1979, Nelson, 1990, Agarwal and Prasad, 1999; Venkatesh, 2000, Mallat, 2007; Ondurus and Pigneur, 2006), new technology characteristics (Ostlund, 1974; Tornatzky and Klein, 1982; Gatignon and Robertson, 1985; Davis, 1989; Moor and Benbasat, 1991; Rogers, 1995) and social influences (Fishbein and Ajzen, 1975; Moore and Benbasat, 1991; Venkatesh and Davis, 2000; Lucas and Spitler, 2000; Christou & Sigala, 2001, 2002; Venkatesh and Baia, 2008; Fennolar and Cuestas, 2010). In relation to financial interactions and new payment system acceptance perceived Security (security, risk, trust) is especially relevant in the context of financial transactions (Khalilzadeh et al., 2017) and would be of critical importance for the present cryptocurrency payment adoption study.

In this paper, authors adopt TAM as the robust and widely used theoretical foundation for understating one of the latest technologies of cryptocurrency payment adoption. We therefore propose to include several constructs at the same time the study of cryptocurrency payment.

Based on the Technology acceptance model (TAM) several factor in relation to block chain technology and cryptocurrency adoption were identified: Perceived Risk (viability, security risk, third party service failure risk, risk of user error, risk of privacy loss, risk of counterparty fraud, risk of illicit association), Perceived Ease of Use (free participation, instant transfers, simple interface, linkage to traditional currencies, relative complexity of bitcoin trading) and Perceived Usefulness (control own money, disintermediation, high speed of transfer, low cost of transfer, high transaction security, limited supply, international scope, lowers merchants cost, increase customer trust requirements, higher price volatility) (Folkinshtein and Lennon, 2017). Following TAM sequential approach authors add attitude construct as a mediator of the impact of perceived usefulness and ease of use on behavioral intention (Davis, Bagozzi and Warshaw, 1989). Sequential approach of TAM model logic has a potential to enhance the explanatory power of the current study research model. Integrated research model proposed in this study focuses on cryptocurrency characteristics and perceived security constructs influence on behavioral intent.

With an empirical test of this model, this paper seeks to achieve three research purposes: 1) to extent the explanatory power and predictive accuracy of TAM model in technology acceptance studies; 2) to investigate integrated effect of technology, individual and social characteristics on business owners intention to use cryptocurrency payment technology in hotels; 3) to address differences in determinants of block chain technology based cryptocurrency acceptance in hotels. The paper is organized as follows: first theoretical background of the study is presented, then hypothesis are developed and a conceptual framework is introduced, third research method, analysis and results are explained and finally the findings, implication, limitations and contributions of this study are discussed.

Perceived Security (security, risk, trust)
Security

Perceived Security is ―the degree to which a customer believes that using a particular mobile payment procedure will be secure‖ (Shih, 2009, p.1346). Security is the degree defined as the protection of security threats, for example in relation to cryptocurrency it is the loss/hijack of digital wallet, money loss due to privacy volatility, etc. (Roussou and Stiakakis, 2016). Perceived security positively affects behavioral intent (Shih, 2009). Security has been found to have strong direct and indirect effect on intention to use new payment technology in restaurant and play a vital role in the context of a new digital environment (Khalilzadeh et al. 2017). Perceived security has been found to be a significant antecedent of trust in e-commerece and online shopping studies (Flavian and Guinallu, 2006; Kim, Ching and Lee, 2011).

Hypothesis: Perceived Security of using cryptocurrency payment has positive influence on intention to use cryptocurrency payment.

Hypothesis: Perceived Security of using cryptocurrency payment positively and directly influence perceived trust.

Perceived Risk (PR)

Perceived risk is defined as ―the consequence of a decision reflecting the variation of its eventual results‖ (gefen, Rao and Tractinsky, 2003) and as ―the possibility that the use of innovation could not be safe‖ (Gerrard and Cunningham, 2003). Risk and uncertainty are the main reasons which cause users to avoid new technology adoption (Pikkarainen and Pikkarainen,

Karjaluoto and Pahnila, 2004; Worthington, Edwards, 2000). Perceived risk was found to affect Behavioral Intention (Cheng et al. 2006). Previous research on new payment services adoption highlighted the importance of taking into consideration both perceived risk and perceived trust as a major concern that the risk of financial loss influence adoption or not of payment service (Liebana-Cabanillas et al., 2014). For example previous research about mobile payment system adoption has shown that risk is a strong influencer on user's trust, and as a result reduces intention to use the new payment service (Chen, 2008; Yang et al., 2012). The issues of security and privacy was found to be an important variables for perceived risk (Christou, 2006, 2007, 2011; Tan, Eze, and Chong, 2009; Wang, Wang, Lin and Tang, 2003). Perceived risk is considered as an attribute of Perceived Usefulness (Liao and Cheung, 2012). In relation to cryptocurrency and blockchain technology Perceived Risk (viability, security risk, third party service failure risk, risk of user error, risk of privacy loss, risk of counterparty fraud, risk of illicit association) is considered to be one of three most influences factors influencing adoption long with PU and PEO (Folkinshtein and Lennon, 2017).

Hypothesis: Perceived Risk of using cryptocurrency payment has a negative influence on intention to use cryptocurrency payment.

Hypothesis: Perceived Risk of using cryptocurrency payment has a direct negative impact on perceived security.

Hypothesis: Perceived Risk of using cryptocurrency payment has a direct negative impact on perceived trust.

Hypothesis: Perceived Risk of using cryptocurrency payment negative influences Perceived Usefulness.

Perceived Trust

In virtual electronic transaction trust is defined as ―the psychological state leading to accept the vulnerability of a trustor, based on positive expectations of the trustee's actions‖ (Singh and Sirdeshmukh, 2000) and ―the willingness of the parties to be vulnerable to the actions of a virtual party‖ (Mayer et al., 1995; Van Der Heijden, Verhagen and Creemers, 2003; Valachis et al., 2009;

Chatzigeorgiou et al., 2019). Perceived trust positively affects behavioral intent (Shih, 2009). Trust is an important construct in determining acceptance of new technologies such as e-commerce (Goles, Lee, Rao and Warren, 2009; yang, Chandlrees, Lin and Chao, 2009) and mobile payment adoption (Misra and Wickamasinghe, 2004). Trust was found to influence the attitude and intention to use a mobile payment (Chandra et al., 2010; Shin, 2009; LU, Yang, CHau and Cao, 2012). Trust is also an antecedent of the ease of use (Chircu, Davis, and Kauffman, 2000; Pavlou, 2003). Technology experience people, for example advanced internet users show higher levels of trust in the online application (Ruiz, Izquierdo and Calderon, 2007; Flavian and Guinaliu, 2007).

Hypothesis: Perceived Trust of the use of cryptocurrency payment has positive influence on intention to use cryptocurrency payment.

Hypothesis: Perceived Trust of the use of cryptocurrency payment has positive influence on attitude **towards the use cryptocurrency payment.**

Data Analysis Results and Discussion

Data on various aspects of cryptocurrency payments were collected from several hotels in Taiwan using a questionnaire during the summer of 2018. The variables employed in this analysis are all related to cryptocurrency payments and include convenience, trust, technological risk, financial risk (security), social risk, perceived usefulness, perceived ease of use, and behavioral intent. Data were collected from 101 respondents working at various positions in the hotels. The respondents' were presented with multiple questions for each variable, with answers in the form of a likert scale ranging from 1 to 7.

The number of questions used in the construction of each variable is as follows: convenience – 4; trust – 7; technological risk – 7; financial risk (security) – 4; social risk – 2; perceived usefulness – 6; perceived ease of use – 4; behavioral intent – 4. The reliability of the data pertaining to each variable is acceptable, as indicated by Cronbach's alpha. The alphas for each variable are as follows: convenience – 0.93; trust – 0.97; technological risk – 0.95; financial risk (security) – 0.954; social risk – 0.9; perceived usefulness – 0.85; perceived ease of use – 0.95; behavioral intent – 0.95.

Figure 1 below shows the model that illustrates the hypothesized relationships between the variables. The model describes the following assumed relationships. Perceived usefulness and perceived ease of use affect behavioral intent to use cryptocurrency payments. Trust, bint 0.8156 0.7535 -0.1765 -0.2512 -0.0988 0.7499 0.8332 1.0000 peu 0.7882 0.7532 -0.1308 -0.2598 -0.1054 0.7663 1.0000 pu 0.6896 0.7471 -0.0119 -0.0785 0.0123 1.0000 sr -0.1038 -0.1910 0.5937 0.7233 1.0000 frs -0.2184 -0.3207 0.7893 1.0000 tr -0.0808 -0.2021 1.0000 tru 0.7887 1.0000 con 1.0000 con tru tr frs sr pu peu bint financial risk (security), technological risk, and social risk affect perceived usefulness. Technological risk and convenience affect perceived ease of use.

Figure 1. Illustration of the hypothesized model.

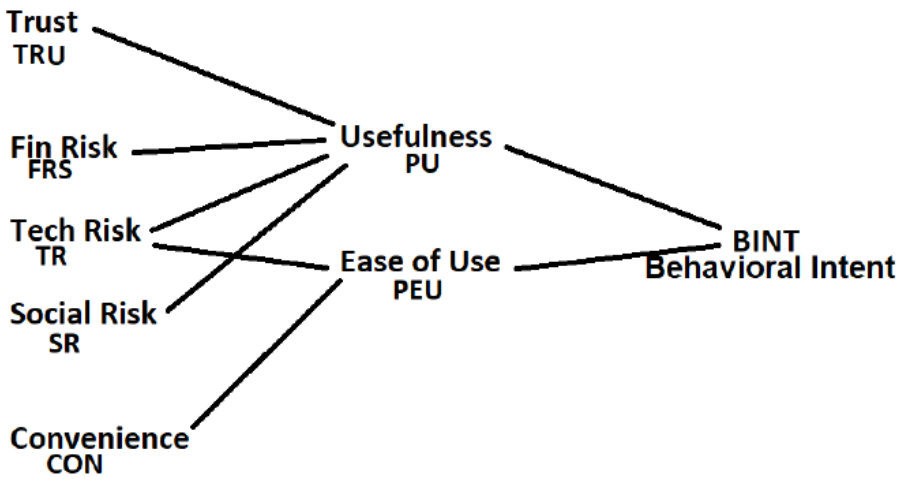

Table 1 below shows the correlation coefficients between the variables. In general agreement with the model illustrated above, perceived usefulness and perceived ease of use are highly correlated with convenience and with trust. However, perceived usefulness and perceived ease of use are not highly correlated with different risk types. Also in general agreement with the model, behavioral intent is highly correlated with perceived usefulness and perceived ease of use.

Table 1. Correlation coefficients between the variables.

	con	tru	tr	frs	sr	pu	peu	bint
con	1.0000							
tru	0.7887	1.0000						
tr	-0.0808	-0.2021	1.0000					
frs	-0.2184	-0.3207	0.7893	1.0000				
sr	-0.1038	-0.1910	0.5937	0.7233	1.0000			
pu	0.6896	0.7471	-0.0119	-0.0785	0.0123	1.0000		
peu	0.7882	0.7532	-0.1308	-0.2598	-0.1054	0.7663	1.0000	
bint	0.8156	0.7535	-0.1765	-0.2512	-0.0988	0.7499	0.8332	1.0000

The empirical models have the forms shown in the following formulas.

(1) **PU = a0 + a1*TRU + a2*FRS + a3*TR + a4*SR + u** _cons 1.114541 .3958813 2.82 0.006 .3287231

1.900359 sr .054723 .0690204 0.79 0.430 -.0822813 .1917273 tr .0153214 .0823468 0.19 0.853 -.1481358 .1787785 frs .0823989 .0981903 0.84 0.403 -.1125073 .277305 tru .5835255 .0505991 11.53 0.000 .483087 .683964 pu Coef. Std. Err. t P>|t| [95% Conf. Interval] Total 133.138179 100 1.33138179 Root MSE = .75407 Adj R-squared = 0.5729 Residual 54.5881249 96 .568626301 R-squared = 0.5900 Model 78.550054 4 19.6375135 Prob > F = 0.0000 F(4, 96) = 34.54 Source SS df MS Number of obs = 101

(2) **PEU = b0 + b1*TR + b2*CON + e**

(3) **BINT = c0 + c1*PU + c2*PEU + m**

In the formulas above, the variables on the left-hand side are dependent variables. The variables listed on the right-hand side are independent variables. The list of constants includes **a0**, **b0**, and **c0**. The list of coefficients includes **a1** – **a4**, **b1**, **b2**, **c1**, and **c2**. The list of error terms includes **u**, **e**, and **m**.

The regression result of the model in formula (1) above is shown in the table 2 below. The overall fit of the model is relatively good. Adjusted R-squared equals 0.57, meaning that 57% of the variance in the dependent variable is explained by the variance in the independent variables. However, individually, not all independent variables seem to be useful in predicting the dependent variable. The P-value is below 0.05 only for the constant (intercept) and trust variable. Trust in cryptocurrency payments has a P-value of 0.000; hence, trust is statistically significant in affecting the perceived usefulness. All of the risk related variables have a P-value much greater than 0.05. the P-values for financial risk, technological risk, and for social risk are 0.403; 0.853; and 0.43. Hence, the effect of all of these risk related variables on perceived usefulness is statistically insignificant. One possible reason for the regression results to show no statistical significance of the risk related variables is multicollinearity. Table 1 shows that financial risk is highly correlated with both the technological and social risk, with the correlation coefficient above 0.7 in both cases.

Table 2. Regression PU = f(TRU, FRS, TR, SR).

Source	SS	df	MS
Model	78.550054	4	19.6375135
Residual	54.5881249	96	.568626301
Total	133.138179	100	1.33138179

Number of obs	101
F(4, 96)	34.54
Prob > F	0.0000
R-squared	0.5900
Adj R-squared	0.5729
Root MSE	.75407

pu	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
tru	.5835255	.0505991	11.53	0.000	.483087	.683964
frs	.0823989	.0981903	0.84	0.403	-.1125073	.277305
tr	.0153214	.0823468	0.19	0.853	-.1481358	.1787785
sr	.054723	.0690204	0.79	0.430	-.0822813	.1917273
_cons	1.114541	.3958813	2.82	0.006	.3287231	1.900359

The regression result of the model in formula (2) above is shown in table 3 below. The overall fit of the model is relatively good. Adjusted R-squared equals 0.61, meaning that 61% of the variance in the dependent variable is explained by the variance in the independent variables. However, individually, not all independent variables seem to be useful in predicting the dependent variable. The P-value is below 0.05 only for the constant and convenience variable. Convenience of cryptocurrency payments has a P-value of 0.000; hence, convenience is statistically significant in affecting the perceived ease of use. The P-value is above 0.05 for technological risk variable, P-value equals 0.279. Hence, the effect of technological risk on perceived ease of use is statistically insignificant.

Table 3. Regression PEU = f(CON, TR).

Source	SS	df	MS
Model	150.260653	2	75.1303263
Residual	89.8829118	98	.91717257
Total	240.143564	100	2.40143564

Number of obs	101
F(2, 98)	81.92
Prob > F	0.0000
R-squared	0.6257
Adj R-squared	0.6181
Root MSE	.95769

peu	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
con	.7154302	.0566743	12.62	0.000	.6029619	.8278984
tr	-.0697816	.0641061	-1.09	0.279	-.1969981	.0574349
_cons	1.527616	.4134471	3.69	0.000	.7071432	2.348088

The regression result of the model in formula (3) above is shown in table 4 below. The overall fit of the model is relatively good. Adjusted R-squared equals 0.71, meaning that 71% of the variance in the dependent variable is explained by the variance in the independent variables. The P-values of the independent variables are below 0.05. Both the perceived usefulness and perceived ease of use have a statistically significant effect on behavioral intent to use cryptocurrency payments in the hotels.

Source	SS	df	MS	Number of obs =	101
				F(2, 98) =	128.72
Model	209.105409	2	104.552704	Prob > F =	0.0000
Residual	79.6025123	98	.812270533	R-squared =	0.7243
				Adj R-squared =	0.7187
Total	288.707921	100	2.88707921	Root MSE =	.90126

bint	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
pu	.3977109	.1215743	3.27	0.001	.1564507	.6389711
peu	.6866128	.0905227	7.58	0.000	.5069734	.8662522
_cons	-.6138875	.3604652	-1.70	0.092	-1.329219	.101444

Conclusion

In summary, this study has applied TAM to cryptocurrency payment adoption in Taiwanese hotels, examining the factors that are more likely to affect the behavioral intent. The empirical results suggest that intent to adopt cryptocurrency payments is affected by perceived usefulness, and perceived ease of use of these payments. In turn, perceived usefulness is affected by trust towards these payments. Interestingly, perceived usefulness was not shown to be significantly affected by different types of risks associated with cryptocurrency payments, including financial risk, technological risk, and social risk. Perceived ease of use, in turn, is affected by convenience of cryptocurrency payments; and is not shown to be significantly affected by trust.

Admittedly, this study has some limitations, including a relatively small sample size of 101 respondents and a relatively simple empirical test. Future research needs to re-examine current results with employment of a larger sample size and more rigorous analysis of that sample.

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