Analysis of the Purchase Intension of Bitcoin by Applying the Technology Acceptance Model

Review of Integrative Business & Economics Research

Renzo Del Giudice Lopez
PhD in Business and Administration, Southern Taiwan University of Science and Technology, Tainan, Taiwan

Wurong Shih
Department of Industrial Management and Information, Southern Taiwan University of Science and Technology, Tainan, Taiwan

ABSTRACT

The present research explores the behavioral process behind the purchase intention of Bitcoin by applying the Technological Acceptance Model (TAM), analyzing factors considered by potential investors. We aim to contribute to the present literature related to Bitcoin and cryptocurrencies, with the intention to explain the factors influencing the purchase intention of Bitcoin by applying the Technology Acceptance Model. From the literature review, the construct measurements examined are Trust and Perceived Risk as External Factors, Perceived Ease of Use and Perceived Usefulness as Consumer Motivation, and Purchase Intention as Consumer Behavior. We collected primary data by gathering responses obtained from both electronic and printed questionnaires distributed to the general public in Tainan City, Taiwan. The results show significant effects of Perceived Ease of Use and Perceived Usefulness of Bitcoin; nonetheless, Perceived Risk and Trust have insignificant impacts on Purchase Intention.

Keywords: Bitcoin; Technology Acceptance Model; Purchase intention.

Received 13 April 2021 | Revised 19 September 2021 | Accepted 9 December 2021.

1. INTRODUCTION

In 2008, an electronic payment system based on mathematical proof called Bitcoin was proposed with the intention of allowing any two parties to transact directly with each other without the need for a trusted third party (Nakamoto, 2008). The core foundation of Bitcoin consists of a peer-to-peer network of nodes that distribute and record transactions, allowing users to interact with the network (Miers, Garman, Green and Rubin, 2013), providing information to users regarding the transactions' structure, values and dates through the so-called 'blockchain', which stores every single movement made between users, turning public the information store in it (Ben-Sasson, Chiesa, Garman, Green, Miers, Tromer and Virza 2014), and showing no limitation in terms of national currency or geographical location (Folkinshteyn and Lennon, 2016). Due to its technical characteristics and applications, Bitcoin is considered an information system built of fundamental computer science concepts and techniques such as cryptography, processing architecture, and peer-to-peer networking (Serapiglia, Serapiglia and McIntyre, 2015).

Numerous cryptocurrencies have been introduced since 2009, with Bitcoin, by far, the most successful one (Chiu and Koeppl, 2017), which has expanded applications in several industries and activities such as trading, use, regulation, and mining (Serapiglia,

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

Serapiglia and McIntyre, 2015); followed by much popular interest and excitement about the potential of decentralized protocols (Leshno and Stack, 2020).

From an economic perspective, Bitcoin is conceived as an intrinsically worthless, storable, non-dividend paying object used as a medium of exchange, but whose price is not being manipulated or stabilized by third institutions such as a central bank (Schilling and Uhlig, 2019) as Bitcoin is only regulated by key players and organizations within the Bitcoin ecosystem (Gandal, Hamrick, Moore and Oberman, 2018).

Bitcoins, as a cryptocurrency, can be considered as digital coins, which are not issued by any government, bank or organization, relying on cryptographic protocols and a distributed network to mint, store and transfer (Ron and Shamir, 2013). It has become the first widely popular cryptocurrency with a broad user base and a rich ecosystem (Eyal and Sirer, 2013). Its success is explained in part by the fact that, unlike traditional e-cash schemes, it does not require trusted parties (Ben-Sasson, Chiesa, Garman, Green, Miers, Tromer and Virza 2014) with potential consequences at consumer, corporative, and societal levels (Gliaglis and Kypriotaki, 2014).

However, by far, academic literature has been performing research focused on technical and technology-related aspects of Bitcoin. Economic issues related to Bitcoin have been analyzed by a large and growing literature (Leshno and Strack, 2020) but with limited consideration of factors such as consumer preference, behavioral intention, perception of potential qualities, and general concepts considered by consumers when purchasing Bitcoin. This study aims to contribute to the academic study of Bitcoin from a consumer perspective by applying theoretical models and methods in business research.

The present paper is related to the literature on behavioral intention analyzed by means of the acceptance of information systems, focusing on findings derived from the application of the Technology Acceptance Model (Davis, 1986), hypothesizing a significant relationship between consumers' Behavioral Intention to Use Bitcoin on the one hand and Bitcoin's Perceived Ease of Use and Perceived Usefulness on the other.

2. LITERATURE REVIEW AND HYPOTHESES

2.1. Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is an adaption of Fishbein and Azjeen's Theory of Reasoned Action (Davis, 1986), with the purpose of explaining (Legris, Ingham and Collerette, 2003), and predicting (Szajna, 1996) why users accept or reject information technology (Legris, Ingham and Collerette, 2003). From measures taken after a brief period of interaction with the system (Szajna, 1996), TAM provides a basis for tracing the impact of external variables, internal beliefs, attitudes, and intentions (Legris, Ingham and Collerette, 2003). The model shows a parsimonious casual structure that is powerful for predicting and explaining user behavior based on theoretical constructs as Behavioral Intention, Perceived Usefulness, and Perceived Ease of Use (Davis, Bagozzi and Warshaw, 1989). It is also based on theoretical analysis from a variety of perspectives such as expectancy theory, self-efficacy theory, behavioral decision theory, diffusion of innovations, marketing, and human computer interaction (Davis, 1989).

TAM has been subject to extensive investigation (Sharma, Yetton and Crawford, 2009), which generally showed significant associations with information technology outcomes (Gefen and Straub, 1997) with correlations compared favorably with other correlations between subjective measures and self-report use found in the information systems literature (Davis, 1989). This provides generally accepted and valid findings (Sharma, Yetton and Crawford, 2009) and substantial empirical support (Venkatesh and

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Bala, 2008), and makes it feasible to apply and test how well it predicts the use intention of technology (Koufaris, 2002) in diverse non-organizational settings (Gefen, Karahanna and Straub, 2003).

From the Technology Acceptance Model, the present paper adapts the independent factors including Perceived Ease of Use and Perceived Usefulness, with the intention to explore the Purchase Intention of Bitcoin by employing consistent predictors that provide significant and verifiable results.

2.1.1. Perceived Ease of Use

Perceived Ease of Use is conceived as the degree to which a prospective user expects a system to be free of effort (Davis, 1989) and complexity (Jen, Liu and Liu, 2009). To assess the Perceived Ease of Use, a user focuses only on the interaction with the system (Van der Heijden, Verhagen and Creemers, 2003) and is more likely to accept a system if it is perceived to be easier to use than another one (Davis, 1989). A system which is easier to use will result in increased job performance for the user (Davis, 1986). Perceived Ease of Use was found to be a significant secondary determinant of the intention to use computers (Davis, Bagozzi and Warshaw, 1989), since it has both direct effects on Intended Use and indirect effects through Perceived Usefulness (Gefen, Karahanna and Straub, 2003). Based on the literature background, the following hypotheses are proposed in this study:

H1: Perceived Ease of Use positively affects customers' Perceived Usefulness of Bitcoin.
H2: Perceived Ease of Use positively affects customers' Purchase Intention of Bitcoin.

2.1.2. Perceived Usefulness

Perceived Usefulness is conceived as the degree to which an individual believes that using a particular system would enhance job performance (Davis, 1986) if the characteristics of a system match the task requirements (Gefen, Karahanna and Straub, 2003). Perceived Usefulness draws attention to an outside benefit external to the system-user interaction, and is focused on extrinsic motivation (Van der Heijden, Verhagen and Creemers, 2003) that is based on the user's believe of positive use-performance relationship (Davis, 1989).

Perceived Usefulness was found to be a major determinant of the intention to use computers (Davis, Bagozzi and Warshaw, 1989), as the ease of use cannot compensate for a system that does not perform a useful function (Davis, 1989). Therefore, the following hypothesis is proposed:

H3: Perceived Usefulness positively affects consumers' Purchase Intention of Bitcoin.

2.2. Trust

Trust is understood as an expectation that others one chooses to trust will not behave opportunistically by taking advantage of the situation (Gefen, Karahanna and Straub, 2003, 2003). With a commercial approach, Dachyar and Banjarnahor (2017) explain trust as an extent of personal guarantees that an online shop will fulfill their obligations, will behave as expected, and will put attention to their customers. Trust may be considered as one of the most effective tools for reducing uncertainty and risks and generating a sense of safety (Gao and Bai, 2014; Lin, 2011). Folkinshteyn and Lennon (2016) consider that the robustness of Bitcoin continues to attract new users despite the high risks involved on the side of the user and Bitcoin service providers. Due to these considerations, the following hypotheses are proposed:

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H4: Trust positively affects consumers' Perceived Usefulness of Bitcoin.
H5: Trust positively affects consumers' Purchase Intention of Bitcoin.

2.3. Perceived Risk

Dachyar and Banjarnahor (2017) and Javernapaa *et al*. (2000) consider Perceived Risk as an important factor which is likely to affect consumer behavior. Garbarino and Strahilevitz (2004) explain that researchers generally agree that perceived risk is a combination of the perception of the likelihood that something will go wrong and the perception of the seriousness of the consequences if it does. The online perceived risks are defined by Wu and Wang (2005) as certain types of financial, product performance, social, psychological, physical or time risks when consumers make transaction online. The effects of Trust on Perceived Risk are explained by Gefen (2000) as the tendency from purchaser that a trusted web retailer will not take advantages opportunistically. Therefore, it is feasible to consider that, as explained by Mayer, Davis and Schoorman. (1995), Trust reduces the Perceived Risk. As a consequence, Kim, Ferrin and Dao. (2008) consider that it should not be a surprise that consumers will be mindful on risk in online transactions, and such risk may impact their choices whether to buy from online sellers. From these considerations, the following hypotheses are proposed:

H6: Consumers' Trust positively affects Perceived Risk of Bitcoin.
H7: Perceived Risk positively affects consumers' Purchase Intention of Bitcoin.

2.4. Purchase Intention

TAM contributes to explaining why online transactions are conducted from a technological point of view (Van der Heijden, Verhagen and Creemers, 2003), postulating that Behavioral Intention is a major determinant of Usage Behavior, and that behavior should be predictable from measures of Behavioral Intention (Davis, Bagozzi and Warshaw, 1989). The relationship between intention and behavior is based on the assumption that people attempt to make rational decisions based on information available (Kim, Ferrin and Dao, 2008), as intentions are indications of how much of an effort people are planning to exert in order to perform a behavior (Azjen, 1991).

Purchase Intention is formed under the assumption of a pending transaction and consequently, is often considered an important indicator of actual purchase (Chang and Wildt, 1994). It is hypothesized that Perceived Ease of Use and Perceived Usefulness apply also in e-commerce purchase intention cases (Gefen, Karahanna & Straub, 2003).

3. RESEARCH METHODOLOGY

3.1. Research Model

TAM is chosen, as explained by Van der Heijden, Verhagen and Creemers (2003) due to its contribution to explaining why online transactions (i.e., Bitcoin purchase) are conducted from a technological point of view. The present research considers every variable needed to be taken into consideration in order to find a suitable model to explain the purchase intention of Bitcoin. The main elements considered in this research are: External Factors (Trust and Perceived Risk), Consumer Motivation (Perceived Ease of Use and Perceived Usefulness), and Consumer Behavior (Purchase Intention). Each one of the mentioned elements are described and applied with the commitment to explore the purchase intention of Bitcoin. From the original TAM, the factor Actual System Use, as

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

explained by Davis (1986), refers to an individual's actual direct usage of the given system on his/her job. Hence, it implies a permanent use from current users (Bitcoin consumers). Due to this, it is considered not relevant to evaluate potential consumer behavior.

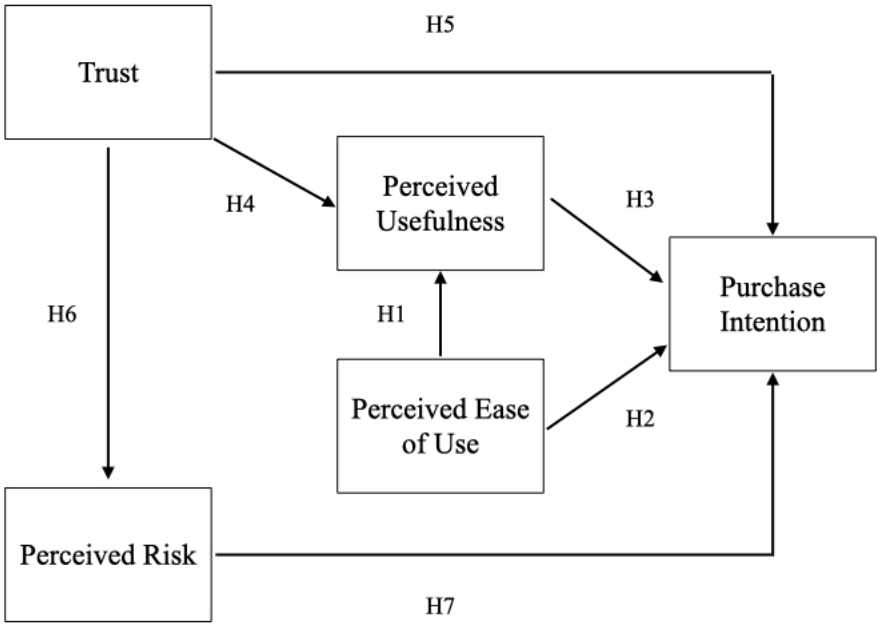

Figure 1. Research Model

3.2. Questionnaire Design and Data Collection Procedure

The questionnaire is based on three main parts of our research model. The first part is composed by a screening question to ensure that the respondents have knowledge about Bitcoin, which is purposed to filter valid answers in the subsequent data analysis. The second part consists of demographic questions with the purpose to understand the characteristics of the sample population. The third part consists of questions based on the construct measurements adapted and reworded from the literature review and previous questionnaire items. The questionnaire was distributed via social media supplemented by printed version distributed to the general public in Tainan City, Taiwan.

A total of 108 valid responses were collected from 154 filled questionnaire surveys. In the sample population, 58 were male (54.7%) and 50 were female (46.3%). The age of the respondents ranged from 18 to 58 years old, with almost 60% of the population under 30 years old. The respondents' nationalities were 22% from Peru, 18% from Mongolia, 16% from Taiwan, and the rest from Vietnam, France, Indonesia, Malaysia, the U.S.A., Colombia, Canada, Germany, Thailand, Guatemala, Swaziland, the Philippines, South Korea, Poland, and Austria.

4. RESULTS

4.1. Exploratory Analysis

An exploratory analysis was conducted using SPSS on the measurement variables in order to extract the unobservable constructs from the indicators (Appendix I). Due to violations

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of convergent and discriminant validity, the construct of Trust, including variables PUS1, PUS2, and PES4 had to be deleted. The results of the exploratory analysis show that the factors including Perceived Ease of Use, Perceived Usefulness, Perceived Risk, and Purchase Intention emerge from 16 measurement variables. The model's KMO coefficient is 0.788 and Bartlett's Test of Sphericity (p-value) = 0.000.

Table 1. Summary of Explanatory Factor Analysis Results

Construct Measurement	Factor Loading	Communalities	Compose Reliability	Average Score Mean
Perceived Ease of Use			0.835	2.9722
PES1	0.771	0.676		
PES2	0.815	0.708		
PES3	0.784	0.672		
PES5	0.769	0.638		
Perceived Usefulness			0.875	2.9938
PUS3	0.863	0.863		
PUS4	0.901	0.865		
PUS5	0.697	0.646		
Perceived Risk			0.794	3.5833
RSK1	0.652	0.445		
RSK2	0.886	0.794		
RSK3	0.896	0.806		
RSK4	0.681	0.513		
Purchase Intention			0.880	2.6547
PUI1	0.681	0.706		
PUI2	0.676	0.803		
NAPUI3	0.757	0.614		
PUI4	0.805	0.722		
PUI5	0.768	0.753		
Cumulative Proportion (%)		70.162		

From the measurement variables, four factors are retained with 70.162% of the total variation kept by the exploratory factor analysis model (Table 1). The factors show high reliability and consistency with each factors Cronbach's Alpha higher than 0.7 (Table 1). From the 5-point Likert-Scale (1 = Strongly Disagree; 5 = Strongly Agree), the average scores (Table1) show that the respondents overall have low Perceived Ease of Use (Mean

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PES = 2.9), Perceived Usefulness (Mean PUS = 2.9), and Purchase Intention (Mean PUI = 2.6). Perceived Risk has a moderately high score from the respondents (Mean RSK = 3.6).

4.2. Correlation Analysis

To explore the relationship between the independent and dependent variables, a Pearson Correlation Analysis was conducted using Summated Scales of Latent Variables. The results as shown in Table 2 reveal that PUI and PES are significantly correlated, with a moderately positive correlation (p-value < 0.05, 0.457). Likewise, PUI and PUS are significantly and strongly correlated (p-value < 0.05, 0.622). The correlation between PES and PUI is significant with moderate strength (p-value < 0.05, 0.427). On the other hand, there is not a significant correlation between RSK and PUI (p-value > 0.05, -0.006).

Table 2. Correlation Analysis Results

		Perceived Ease of Use	Perceived Usefulness	Perceived Risk	Purchase Intention
Perceived Ease of Use	Pearson Correlation	1	0.427**	-0.069	0.475**
	Sig. (2-Tailed)		0.000	0.478	0.000
	N	108	108	108	108
Perceived Usefulness	Pearson Correlation	0.427**	1	0.097	0.622**
	Sig. (2-Tailed)	0.000		0.317	0.000
	N	108	108	108	108
Perceived Risk	Pearson Correlation	-0.069	0.097	1	-0.006
	Sig. (2-Tailed)	0.478	0.317		0.948
	N	108	108	108	108
Purchase Intention	Pearson Correlation	0.475**	0.622**	-0.006	1
	Sig. (2-Tailed)	0.000	0.000	0.948	
	N	108	108	108	108

**. Correlation is significant at the 0.01 level (2-tailed).

4.3. Multiple Regression Analysis

4.3.1. Model 1

To understand the effects of PES, PUS, and RSK on PUI, we conducted a Multiple Linear Regression Analysis (Table 3) of the independent variables (PES, PUS, RSK) and the

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dependent variable (PUI). The model's Adjusted R-square is 0.426 (i.e., the model explains 42.6% of the dependent variable's variations); this result is reasonable due to the wide variety of factors that could explain PUI PES, PUS and RSK (Younus, Rasheed and Zia, 2015). The model's overall test is 0.000 < 0.05, indicating that it has significant explanatory power. The p-values of PES (0.003) and PUS (0.000) are below 0.05, which means that these two variables have explanatory power on PUI. On the other hand, the p-value of RSK (0.598) is higher than 0.05, meaning that this variable does not have significant explanatory power on PUI. Although the present model has enough explanatory power (p-value = 0.000 < 0.05), we found it necessary to obtain more significant Multiple Linear Regression coefficients in order to state a formula for calculating the Purchase Intention of Bitcoin. Therefore, another Multiple Linear Regression Analysis excluding the variable RSK is performed in Model 2.

4.3.2. Model 2

From the results as shown in Table 4, an insignificant intercept (0.258) and highly significant coefficients on PES (0.002) and PUS (0.000) are found. Specifically, PUS has a higher impact than PES (Beta = 0.513 vs. Beta = 0.256). The multicollinearity coefficients in Model 2 are acceptable (Tolerance > 0.1, VIF < 10) for PES and PUS, meaning that the estimates are reliable. As a result of this analysis (Table 4), the following model is proposed:

$$PUI: 0.317 + [(0.284*PES) + (0.5*PUS)] \quad (1)$$

Table 3. Multiple Linear Regression Analysis Coefficients - Model 1

Model 1		(Constant)	Perceived Ease of Use	Perceived Usefulness	Perceived Risk
Unstandardized Coefficients	B	0.476	0.278	0.506	-0.044
	Std. Error	0.409	0.091	0.080	0.084
Standardized Coefficients	Beta		0.250	0.519	-0.039
t		1.163	3.065	6.343	-0.532
Sig.		0.248	0.003	0.000	0.598
Collinearity Statistics	Tolerance		0.805	0.802	0.976
	VIF		1.242	1.248	1.025

Dependent Variable: Purchase Intention

Predictors: (Constant), Perceived Ease of Use, Perceived Usefulness, Perceived Risk

Adjusted R Square: 0.426

Sig.: 0.000

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

Table 4. Multiple Linear Regression Analysis Coefficients - Model 2

Model 2		(Constant)	Perceived Ease of Use	Perceived Usefulness
Unstandardized Coefficients	B	0.317	0.284	0.500
	Std. Error	0.278	0.090	0.079
Standardized Coefficients	Beta		0.256	0.513
T		1.137	3.165	6.353
Sig.		0.258	0.002	0.000
Collinearity Statistics	Tolerance		0.818	0.818
	VIF		1.223	1.223

Dependent Variable: Purchase Intention

Predictors: Perceived Ease of Use, Perceived Usefulness

Adjusted R Square: 0.440

Sig.: 0.000

4.4. Mediation Analysis Between Perceived Ease of Use, Perceived Usefulness and Purchase Intention

To explore the potential indirect effects of PES as a mediator on the relationship between PUI and PUS, we performed statistical Mediation Analysis on the three factors mentioned. In Model 2, PES acts an Antecedent Factor (Predictor), PUS as a Mediator Factor, and PUI as a Consequent Factor (Outcome) in a Single-Mediation Model. Regression analysis was used to determine the hypothesis that PUS mediates the effects of PES on PUI. The results reported in Table 5 indicate that PES is a significant predictor of PUS ($b = 0.49$, Std. Error = 0.13, p-value < 0.05), and at the same time, PUS is a significant predictor of PUI ($b = 0.5$, Std. Error = 0.1, p-value < 0.05). These results support the mediational hypothesis. Despite the positive results in the mediation, PES is still a significant predictor after using PUS as a mediator with $b = 0.29$, Std. Error = 0.12, and p-value < 0.05. These results are consistent with a partial (incomplete) mediation, which means a considerable effect of PUS on PUI as a mediator. However, the direct effect of PES on PUI is significant. Approximately 44.04% of the variance in PUI is accounted by the independent variables (PES and PUS).

A bootstrap estimation approach was tested to explore the indirect effects in the mediation model, applying the SPSS macro extension PROCESS developed by Andrew F. Hayes (2013). The bootstrap estimation in PROCESS macro extension allows us to create thousands of simulated datasets using re-sampling with replacement, running the analysis over the samples, and providing a 95% of confidence intervals (Mackinnon, 2015). The rule to determine the significance of the bootstrap analysis results is based on the Lower and Upper Coefficient Intervals values. If these coefficients are lower than or equal to zero, then p-value > 0.05 (insignificant indirect effects). For this analysis, a bootstrap of 5000 samples is considered, making possible to test the significance of the

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indirect effect given our small sample size (N = 108). As seen in Table 6, the indirect effect of PES on PUI is significant (b = 0.2437, Std. Error = 0.0699, 95% Coefficient Intervals = 0.0944, 0.3404). PES is associated with approximately 24.37% points higher in PUI scores as mediated by PUS.

Table 5. Mediation Analysis – Path Coefficients and Model Summary for Dependent Variable

Output	Coefficient	Std. Error	t	p-value
PES To PUS (A-Path)	0.4877	0.1307	3.7307	0.0003
PUS To PUI (B-Path)	0.4996	0.0985	5.0746	0.0000
PES To PUI (Direct Effect – C'-Path)	0.2843	0.1116	2.5477	0.0123
PES To PUI (Total Effect – C-Path)	0.5279	0.1196	4.4128	0.0000
Sample Size: 108				
Dependent Variable: PUI; Independent Variable: PES; Mediator: PUS				
Total Effect Model - Dependent Variable R-square: 0.4404				
Total Effect Model - Dependent Variable p-value: 0.0000				

Table 6. Mediation Analysis – Bootstrap Results for Indirect Effects

Indirect Effects of Perceived Ease of Use on Perceived Usefulness			
Effect	Boot Std. Error	Boot LlCI	Boot UlCI
0.2437	0.0699	0.1052	0.3814
Partially Standardized Indirect Effects of Perceived Ease of Use on Perceived Usefulness			
Effect	Boot Std. Error	Boot LlCI	Boot UlCI
0.2629	0.0738	0.1170	0.4073
Completely Standardized Indirect Effects of Perceived Ease of Use on Perceived Usefulness			
Effect	Boot Std. Error	Boot LlCI	Boot UlCI
0.2190	0.0622	0.944	0.3404

5. DISCUSSIONS

5.1. Hypothesis Results

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

5.1.1. Perceived Ease of Use and Perceived Usefulness

There is a significant correlation between PES and PUS (Table 2), with p-value = 0.000 < 0.05, corroborating H1. The correlation value between these variables is 0.427, which suggests a positive correlation with moderate strength. On the same way, the results on the Mediation Analysis (Table 5) indicate that PES is a significant predictor of PUS (b = 0.49, Std. Error = 0.13, p-value < 0.05). Therefore, we can state that the Perceived Ease of Use affects consumers' Perceived Usefulness of Bitcoin as a predictor.

5.1.2. Purchase Intention and Perceived Ease of Use

As shown in Table 2, PUI and PES are significantly correlated (p-value = 0.000 < 0.05), corroborating H2. The correlation value between these variables is 0.457, which suggests a positive correlation with moderate strength. The results of the Mediation analysis (Table 5) show that PES is still a significant predictor after being controlled by PUS as mediator (b = 0.29, Std. Error = 0.12, p-value < 0.05). These results determine our model as a partial mediation one, which means that there are considerable effects of Perceived Usefulness on Purchase Intention as a mediator (confirmed by the Hypothesis 1), but also the direct effect of PES on PUI is significant. Therefore, we can state that the Perceived Ease of Use affects consumers' Purchase Intention of Bitcoin.

5.1.3. Purchase Intention and Perceived Usefulness

PUI and PUS are significantly correlated (Table 2) with p-value = 0.000 < 0.05), corroborating H3. The correlation value between these variables is 0.622, which suggests a positive correlation with strong strength. The results of the Mediation analysis determine that the indirect effect of PES on PUI is significant (b = 0.2437, Std. Error = 0.0699, 95% Coefficient Intervals = 0.0944, 0.3404). PES is associated with approximately 24.37% points higher PUI scores as mediated by PUS. Therefore, we can state that the Perceived Usefulness affects consumers' Purchase Intention, with a 24.37% of its effects produced by the mediation between Perceived Ease of Use and Purchase Intention.

5.1.4. Trust

The results of the pre-test Exploratory Analysis (Appendix 1) showed that the construct TRU lack of content validity, as it's possible to appreciate on Table 4.2, is merged with the construct PUI. The components do not make difference for the respondents, being TRU assimilated ((TRU1, TRU2, TRU4) by PUI and PES (TRU3) to potential customers. Being the construct Trust impossible to perform a Reliability test and Factor Analysis, Hypotheses 4, 5 and 6 are rejected, being impossible to determine if Trust may positively affect consumers' Purchase Intention of Bitcoin in this research.

5.1.4. Perceived Risk

As shown in Table 2, there is a not significant correlation between RSK and PUI (p-value = 0.948 > 0.05). The correlation value between these variables is -0.006, which suggests a negative correlation with weak strength. This result is being confirmed with the coefficients obtained on Table 4.10 with the Multiple Regression Analysis, where RSK has a p-value of 0.598 > 0.05, meaning that this variable doesn't have a considerable explanatory power over PUI. Hence, there is not enough evidence to corroborate H7. Therefore, we can state that Perceived Risk doesn't affect the consumers' Purchase Intention of Bitcoin.

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

Table 7. Summary of Hypotheses Results

Hypotheses	Description	Test Result
H1	Perceived Ease of Use Positively Affects Consumers' Perceived Usefulness of Bitcoin.	Significant
H2	Perceived Ease of Use Positively Affects Consumers' Purchase Intention of Bitcoin.	Significant
H3	Perceived Usefulness Positively Affects Consumers' Purchase Intention of Bitcoin	Significant
H4	Trust Positively Affects Consumers' Perceived Usefulness of Bitcoin.	Not Available
H5	Trust Positively Affects Consumers' Purchase Intention of Bitcoin	Not Available
H6	Consumers' Trust Positively Affects the Perceived Risk of Bitcoin	Not Available
H7	Perceived Risk Positively Affects Consumers' Purchase Intention of Bitcoin	Not Significant

5.2. Research Findings

5.2.1. Influence of Trust and Perceived Risk as External Factors on the Purchase Intention of Bitcoin

According to the empirical results of this research, it was impossible to determine the influence of the external Trust factor on any of our model constructs. The construct measurements for TRU were merged into PUI (TRU1, TRU2, TRU4) and being a part of PUS (TRU3), which is interpreted as that the sample is unable to distinguish these concepts (Appendix 1). The external RSK factor shows a good reliability in Table 1 (Cronbach's Alpha = 0.791) and help us to interpret the overall consumer perception on Bitcoin as a moderate-risk asset, with 3.6 mean Average Score on a 5-point Likert Scale. Despite the reliability of the Risk factor, the correlation analysis (Table 2) does not show a significant correlation between RSK as an Independent Variable and PUI as the Dependent Variable (p-value = 0.948 > 0.05). Likewise, the results for the Multiple Regression Analysis show that RSK has a p-value of 0.598 > 0.05 (Table 3). Hence, the Risk factor has an insignificant influence on the Purchase Intention of Bitcoin.

5.2.2. Influence of Perceived Ease of Use and Perceived Usefulness on the Purchase Intention of Bitcoin

PUS and PES, as intrinsic factors to determine the Purchase Intention of Bitcoin, show good reliability in Table 1 (PUS Cronbach's Alpha = 0.875, PES Cronbach's Alpha = 0.835). These factors show an Average Score of 2.9 (PUS and PES); therefore, we can interpret the overall perception of Perceived Usefulness and Perceived Ease of Use of Bitcoin as slightly low among consumers. We can take in consideration the differences between the grade of familiarity of consumers with electronic finance and information systems as factors that might perform some moderation on PUS and PES. There are significant correlations between PUS and PES as Independent Variables and PUI as Dependent Variable (PUS p-value = 0.000 < 0.05; PES p-value = 0.000 < 0.05) (Table 2). Therefore, only these two factors may be considered in designing the model of the

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

Purchase Intention of Bitcoin. The Multiple Linear Regression analysis (Table 5) provides us highly significant coefficients on PES (0.002) and PUS (0.000). PUS has a larger impact than PES on PUI (b = 0.513 and 0.256, respectively). This result might be corroborating with the mediation effect between Perceived Ease of Use and Perceived Usefulness on Purchase Intention.

5.2.3. Research Model to specify the Purchase Intention of Bitcoin by Applying the Technological Acceptance Model

Based on the empirical results, our research model is presented with the respective coefficients (Figure 2). Considering the significant factors on Purchase Intention, the Multiple Linear Regression Analysis was performed to obtain multicollinearity coefficients (Table 4), which allow us to elaborate a linear model in order to predict and analyze the Purchase Intention of Bitcoin. The linear model is proposed as follows:

$$PUI: 0.317 + [(0.284*PES) + (0.5*PUS)] \quad (2)$$

The results from the linear model may be interpreted through the Mediation Model, which implies that the impact of the antecedent (Perceived Ease of Use) is moderated by the mediator (Perceived Usefulness) to the consequent (Purchase Intention). Therefore, Table 5 shows the path coefficients, which are condensed in Figure 3. The potential results from the linear model to determine Purchase Intention of Bitcoin could be complementally explained through the mediation model of the factors. Hence, Perceived Ease of Use contributes 24.47% to the Purchase Intention scores by being mediated with the Perceived Usefulness scores.

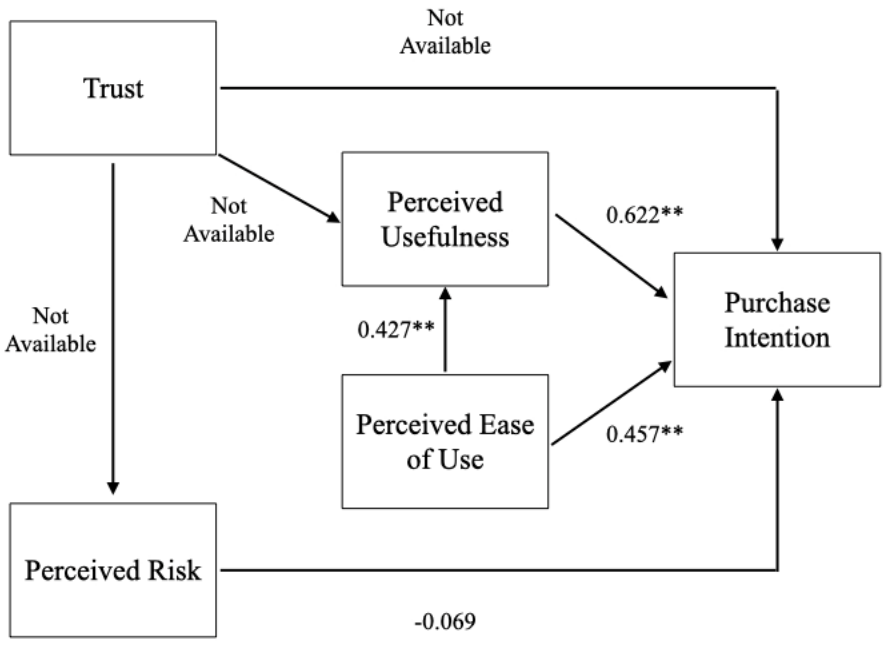

Figure 2. Research Model with Correlation Analysis Coefficients

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

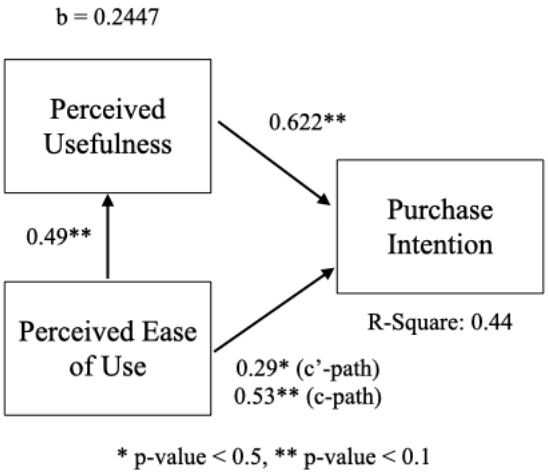

Figure 3. Mediation Model with Coefficients

6. CONCLUSION

6.1. Implications

The electronic finance and information system industry should take into consideration the present and potential impacts of Bitcoin (and other cryptocurrencies) on the preferences of consumers. Being the most relevant cryptocurrency, Bitcoin represents a phenomenon with considerable research and strategic potentials for different institutions and governments. The traditional finance market, based on fiat currencies, may find in Bitcoin a new product to invest and commercialize massively into the financial market. Following this idea, to establish methodological techniques to understand and quantify the behavioral intention from consumers to Bitcoin must be performed. Institutions may take in consideration that Bitcoin has the potential to become a permanent asset into the market, with potential disruptive innovations, which is also an opportunity and challenge for managers and future managers to understand and implement.

The present research may provide a glance to the considerations of purchasing Bitcoin from the consumers' perspective. Bitcoin offers to some consumers an alternative to the use of credit and debit cards networks, whereas users buying Bitcoin appear to be not using them but to hold them in anticipation of appreciation (Bohme, Christin, Edelman, and Moore, 2015). Being not regulated by any central bank or institution, Bitcoin price fluctuations are 'wild' (Schilling and Uhlig, 2019), which could derivate into investment loses. In fact, the positive correlation between PUS and PUI might be considered a change of perception of Bitcoin's 'store of value' properties, when consumers start to consider their holdings as investments for a long term (Citi Group, 2021). More light to this evolution of Bitcoin perception may be provided in further research work.

6.2. Recommendation for Further Studies

The first recommendation for further research is to collect a larger sample. Also, more factors, such as income, occupation, and legal status of Bitcoin in the respondents' home countries must be considered. As an exploratory research, the results could be affected by the inclusion of different variables affecting Purchase Intention. An extensive literature

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

review about this topic must be performed as well. It is recommended to analyze financial variables in future studies due to the direct implications of Bitcoin as a cryptocurrency on finance. The constructs measurements in the questionnaire adapted from TAM research on online purchase intention could contain bias or unclear questions to the respondents. Proper cryptocurrency construct measurements should be developed and applied in further studies based on the Theory of Reasoned Action, the Theory of Planned Behavior, and the Unified Theory of Acceptance and Use of Technology.

ACKNOWLEDGMENTS

The present research is supported by the School of Business of the Southern Taiwan University of Science and Technology, as a part of the PhD Program in Business and Management. The authors express their gratitude to the reviewers for their helpful observations and suggestions.

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Appendix 1

Constructs	Factor1	Factor2	Factor3	Factor4	Factor 5
PUI2	0.812				
PUI5	0.806				
PUI1	0.785				
PUI4	0.776				
PUI3	-0.683				
TRU1	0.649				
TRU4	0.605				
TRU2	0.550				
PES1		0.770			
PES5		0.751			
PES2		0.739			
PES3		0.732			
PUS1		0.576			
PUS4			0.854		
PUS3			0.838		

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

PUS5	0.721			
TRU3	0.582			
RSK3		0.919		
RSK2		0.899		
RSK4		0.620		
RSK1		0.536		
PUS2				0.717
PES4				0.594

Appendix 2

Constructs	Label	Items	Source
Perceived Ease of Use	PES1	Bitcoin is easy to use.	Adapted from Dachyar and Banjarnahor (2017).
	PES2	Learning to operate Bitcoin is easy.	
	PES3	The interaction with Bitcoin is easy to understand.	
	PES4	It's easy to find information about Bitcoin.	
	PES5	To get Bitcoin do what I need to do is easy.	
Perceived Usefulness	PUS1	To trade using Bitcoin is easy.	Adapted from Dachyar and Banjarnahor (2017).
	PUS2	To trade using Bitcoin is fast.	
	PUS3	Bitcoin could improve my financial and commercial performance.	
	PUS4	Bitcoin could enhance my financial and commercial performance.	
	PUS5	Bitcoin's features (Wallet, Bitcoin Cash, etc.) are useful for me.	
Trust	TRU1	Bitcoin is trustworthy.	Adapted from Dachyar and Banjarnahor (2017).
	TRU2	Bitcoin keeps guarantees and responsibilities.	
	TRU3	Bitcoin's economic performance could meet my profit expectations.	
	TRU4	Bitcoin could be my best investment selection.	
Perceived Risk	RSK1	Purchasing Bitcoin could include risks compared to conventional assets.	Adapted from Dachyar and Banjarnahor (2017), and Wu and Wang (2004).
	RSK2	Using Bitcoin in monetary transactions has potential risk.	
	RSK3	Using Bitcoin in product purchases has potential risk.	
	RSK4	My overall perception of Bitcoin is:	
Purchase Intention	PUI1	I am probably going to purchase Bitcoins.	Adapted from Dachyar and Banjarnahor
	PUI2	I could recommend Bitcoin to my friends, family and other companions.	

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PUI3	I would not hesitate to provide information to Bitcoin.	(2017).
PUI4	I would utilize my credit card to purchase Bitcoin.	
PUI5	I will perform my transactions using Bitcoin in the future.	

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