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Behavioral intention to use cryptocurrency as medium of exchange: Malaysian youth perspective

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Abstract

This study explores the behavioral intentions of Malaysian youth in the Klang Valley regarding their use of cryptocurrency as a medium of exchange, employing the Unified Theory of Acceptance and Use of Technology (UTAUT) framework. The study investigates four variables, including performance expectancy, effort expectancy, social influence, and facilitating conditions, and their effect on the intention to utilize cryptocurrencies as a medium of exchange. The results indicate that performance expectancy and effort expectancy play a crucial role in influencing adoption decisions, underscoring the significance of perceived usefulness and ease of use. The impact of social influence, which encompasses peer and societal acceptance, is crucial. Additionally, facilitating conditions like dependable infrastructure and accessible support significantly increase the chances of adoption. This study addresses these dimensions within a developing country where cryptocurrency adoption is emerging, thereby filling a significant gap in the existing literature. This provides practical guidance for decision-makers, Fintech innovators, and enterprises to promote inclusive and youth-focused approaches for enhancing the use of cryptocurrency as a medium of exchange. The findings enhance the discussion surrounding digital financial payment ecosystems, especially in customizing strategies for tech-savvy younger populations.

Keywords: Behavioral intention, cryptocurrency adoption, industry, infrastructure, Malaysian youth, process innovation, UTAUT framework.

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1. Introduction

Cryptocurrency is a digital or virtual currency which is secured by cryptography [1, 2]. This is built on blockchain technology and enables peer-to-peer transactions without financial intermediaries [3]. The term used to refer to cryptocurrency differs globally and depends on the regulatory and classification perspective. For example, in Germany, it is referred to as a "crypto-token", whereas in Switzerland, it is known as an "exchange token". In Argentina, Thailand and Australia, cryptocurrency is commonly termed "digital currency", while countries like Colombia and Lebanon describe it as "electronic currency". Other terms include "cyber currency" in Italy and "virtual asset" in Mexico and Honduras [4].

Since Satoshi Nakamoto launched Bitcoin in 2009, Nakamoto [3], thousands of cryptocurrencies have emerged, such as Ethereum, Ripple, Tether and Litecoin [5]. These cryptocurrencies are categorized as altcoins. Every cryptocurrency possesses distinct applications and features [1]. Ethereum facilitates smart contracts, Ripple offers real-time gross settlement, Litecoin enables rapid transaction confirmation, and Tether is pegged to fiat currencies to ensure stability.

In recent years, cryptocurrencies have transformed from niche digital assets to financial investments due to their popularity and awareness. More and more people nowadays know about and are interested in cryptocurrency. According to Triple-A research (2024), global cryptocurrency ownership in 2024 has reached 562 million individuals, accounting for approximately 6.8% of the world's population and marking a 33% increase from the previous year. Although cryptocurrencies were initially perceived as speculative investments, they are now gaining recognition as a potential medium of exchange, which various merchants worldwide accept for goods and services [6]. For example, Ferrari, Grab, Gucci, Charles & Keith, and Balenciaga have started accepting cryptocurrency payments. This change is particularly significant in the context of younger populations who are more technologically savvy and open to adopting alternative financial technologies (Fintech) [7, 8]. However, despite the potential, cryptocurrencies face challenges in becoming mainstream fiat currency as a medium of exchange due to legal uncertainties, volatility, and security concerns [5].

Even though cryptocurrencies have issues with legal uncertainties, volatility, and security concerns, they offer several advantages over traditional fiat currencies, including faster transaction speeds, lower fees, and privacy in transactions [9]. These attributes are particularly appealing to digitally adept young adults who value efficiency, accessibility, and financial autonomy. Unlike traditional currencies, cryptocurrencies can be transacted anytime and across borders without the constraints of traditional financial systems, thereby providing users with both convenience and control over their funds.

In Malaysia, businesses have slowly accepted cryptocurrency payments. Lee et al. [10] found that there are few merchants in Malaysia, such as Overstock online shop, Muhayiddin et al. [11], and several restaurants in Kuala Lumpur, Selangor, and Petaling Jaya, such as Wongkok in Mytown, Dae Jang Geum Korean Restaurant, RuzNor Corner, and MyEspresso, that accept cryptocurrency as payment. While merchants accept cryptocurrency payments, the adoption of cryptocurrency for transactions remains limited. This raises the question of how various factors affect an individual's intention to utilize cryptocurrency as a medium of exchange. Given that cryptocurrency is only accepted and adopted when there is an intention to use it [10].

Malaysian youth, characterized by high rates of mobile phone and internet use, are often early adopters of Fintech. Based on Figure 1, young adults in Malaysia have high mobile phone and internet usage rates compared to other age groups. Furthermore, the rise of digital payment methods such as e-wallets like Touch'n Go, GrabPay, and BigPay reflects their demand for innovative and efficient payment options. Studies suggest that this demographic values privacy, accessibility, and control over their finances, which aligns well with the benefits of cryptocurrency [11]. Therefore, cryptocurrencies offer Malaysian youth an attractive alternative to traditional financial payment systems. Although it presents an appealing alternative payment system, it remains unclear to what extent Malaysian youth intend to use cryptocurrencies as a medium of exchange rather than as an investment. This indicates that a gap in empirical research exists regarding the intention of youth in Malaysia to utilize cryptocurrency as a payment method.

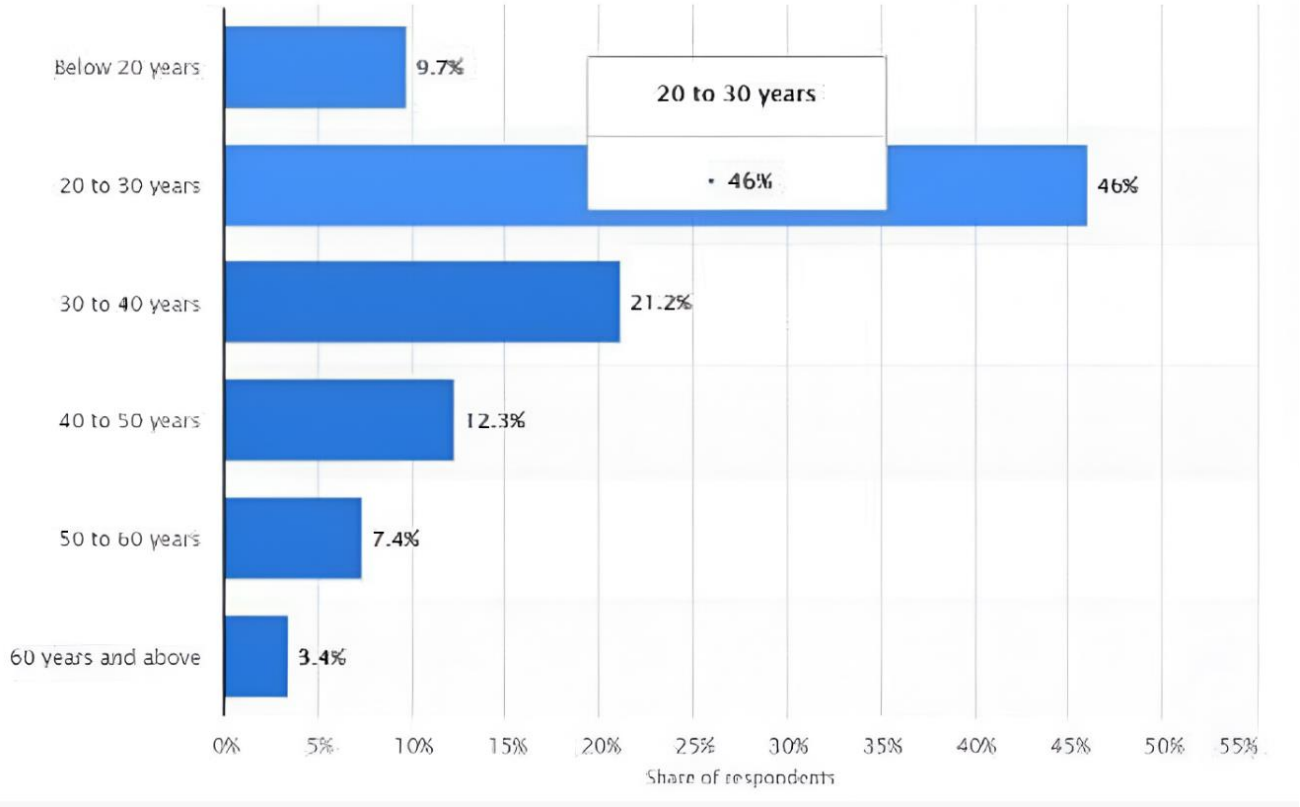

Figure 1.
Malaysia's age group distribution of internet users in 2020.
Source: Statista [12]

To analyze the behavioral intention of Malaysian youth to use cryptocurrency as a medium of exchange, this research employed the Unified Theory of Acceptance and Use of Technology (UTAUT) framework, which was developed by Venkatesh et al. [14]. This model is widely applied for understanding technology adoption behaviors. The UTAUT model identifies four key factors: performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC) as primary drivers influencing behavioral intention (BI). This framework has been extensively utilized to assess adoption behaviors in digital finance, Fintech, and mobile payment research, revealing how these factors influence user behavior across various contexts [13, 14]. The UTAUT framework is particularly appropriate for examining fintech adoption, and its relevance to the behavioral intention regarding the use of cryptocurrencies as a medium of exchange among young Malaysians justifies its application.

1.1. Problem Statement

In recent years, the widespread adoption and acceptance of cryptocurrency as a medium of exchange have generated significant attention and discussion among researchers [15]. Despite the growing importance of cryptocurrency in the global financial landscape, there exists a significant gap in understanding the BI of using cryptocurrency as a medium of exchange, particularly from the perspective of the youth demographic [16]. While BI studies have examined cryptocurrency usage broadly, the studies analyze intention to use cryptocurrency as an investment or in general without a focus area [17-19]. Therefore, the study will close the gap by analyzing the intention to use cryptocurrency as a medium of exchange.

Moreover, most research concerning the intention to use cryptocurrency is conducted in developed regions, particularly North America and Europe [17, 20]. The intention to use cryptocurrency in developing countries such as Malaysia has not been researched extensively, but it has been found that the Malaysian population exhibits significant interest in cryptocurrency. Bitaraf [21] research data reveals that roughly 15 percent of Malaysia's population owns crypto, making the country 10th in the world for its cryptocurrency ownership rate. This figure is very close to other emerging economies in the region, such as Thailand (17.6%) and Vietnam (17.4%), which are shown in Figure 2. Therefore, Malaysia presents a suitable context for examining the intention to utilize cryptocurrency as a medium of exchange, given the increasing ownership of cryptocurrency among Malaysians.

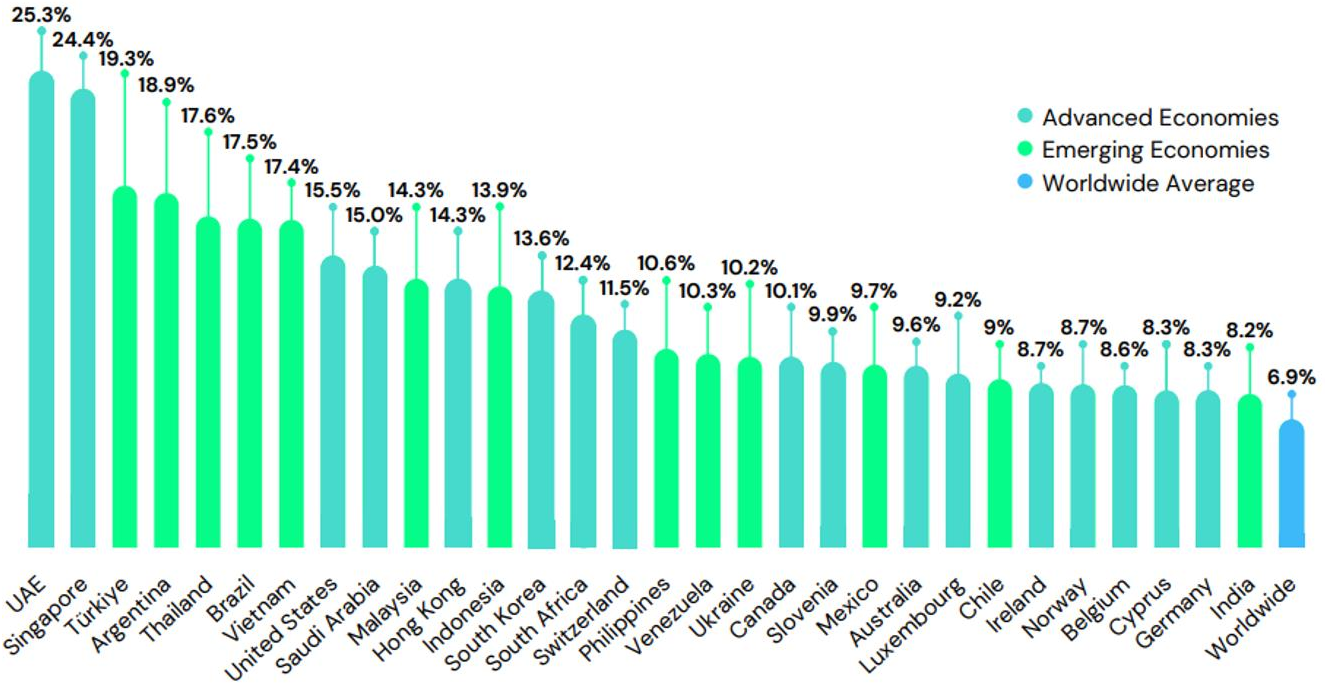

Figure 2.
Top 30 countries' ownership rate.
Source: Bitaraf [21]

Furthermore, the existing literature on BI to use cryptocurrency as a medium of exchange often overlooks the youth demographic [22]. Being born into the digital era, youth represent the next generation of consumers and are expected to have a significant influence on future development in finance and technology. Based on Figure 3, the majority of cryptocurrency owners are between the ages of 25 and 34, implying that the younger generation is interested in investing in cryptocurrency. Similarly, Figure 4 also reveals that the younger generation had higher usage for transaction purposes [23]. Hence, it is crucial to focus on the youth perspective to investigate those factors that could affect their use of cryptocurrency as a medium of exchange. However, limited research has been done to explore how youth think and act with regard to cryptocurrency as a medium of exchange. The evidence of this is that the majority of current research only looks at the general consumer view with specified target respondents [24-26].

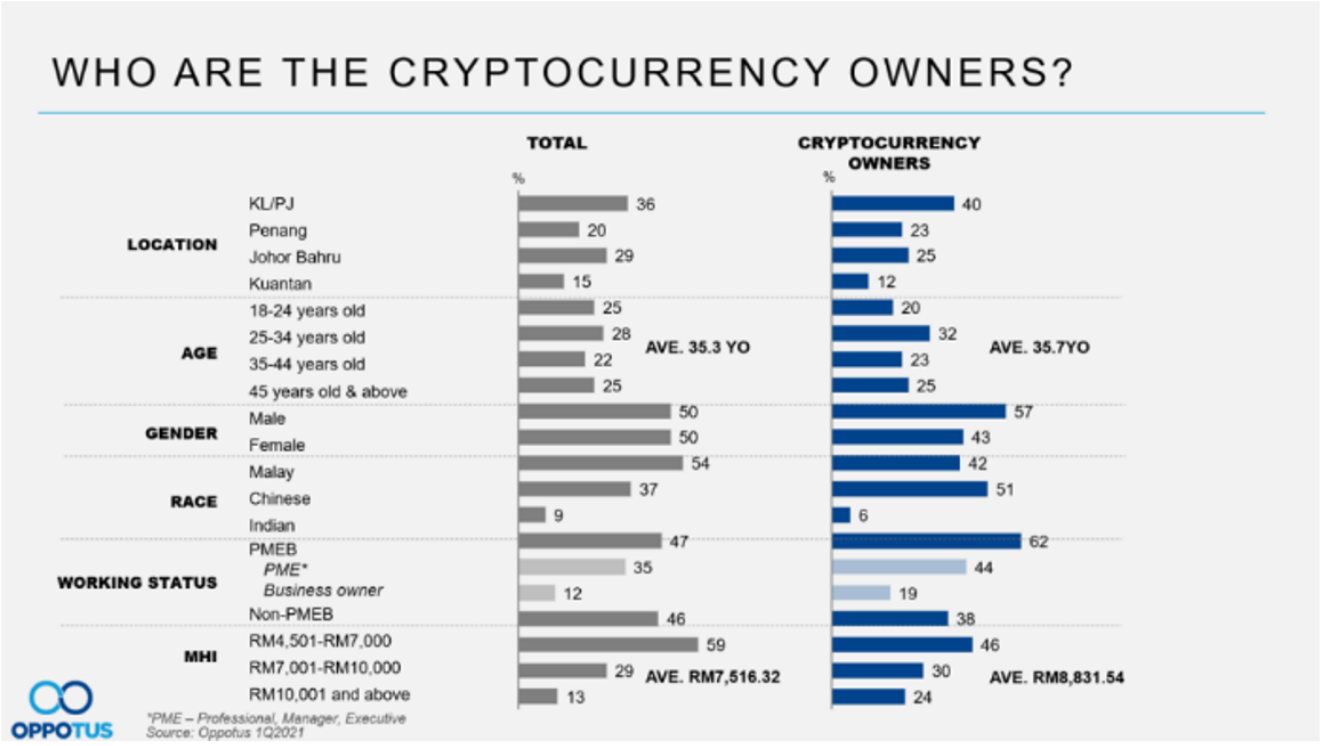

Figure 3.
Profile of Malaysian cryptocurrency owners.
Source: Idris and Hamzah [27]

	Generation Z	Millennials	Bridge millennials	Generation X	Baby boomers and seniors
• Investment reasons	52.7%	54.5%	55.8%	57.5%	54.0%
• Transactional reasons	37.5%	37.3%	34.5%	29.8%	17.1%
• Fears of missing an investment opportunity	9.7%	8.2%	9.7%	12.8%	28.9%

Figure 4.
Measuring consumer usage of cryptocurrency.
Source: BigPay [23].

Therefore, the research aims to examine the factors that influence the behavioral intention (BI) of cryptocurrency as a medium of exchange, with a particular focus on the youth perspective. By addressing this gap and analyzing key variables such as performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC) within the UTAUT framework, this study aims to provide valuable insight into the BI to use cryptocurrency as a medium of exchange among youth.

1.2. Underpinning Theory

The Unified Theory of Acceptance and Use of Technology (UTAUT) is a widely recognized theoretical framework in the field of technology acceptance and usage behavior, which was developed by Venkatesh, et al. [28]. It identifies Performance Expectancy (PE), Effort Expectancy (EE), and Social Influence (SI) as direct determinants of Behavioral Intention (BI) toward technology adoption and usage, which is illustrated in Figure 5, BigPay [23]. This model is employed to explain how emerging technologies are accepted by individuals and organizations [29]. UTAUT synthesizes and extends various earlier models, such as the Theory of Reasoned Action (TRA), the Technology Acceptance Model (TAM), the Theory of Planned Behavior (TPB), and the Model of PC Utilization (MPUC) [29]. Table 1 indicates each earlier model with the author and core variables, aiding researchers in understanding how UTAUT was formed based on these earlier models.

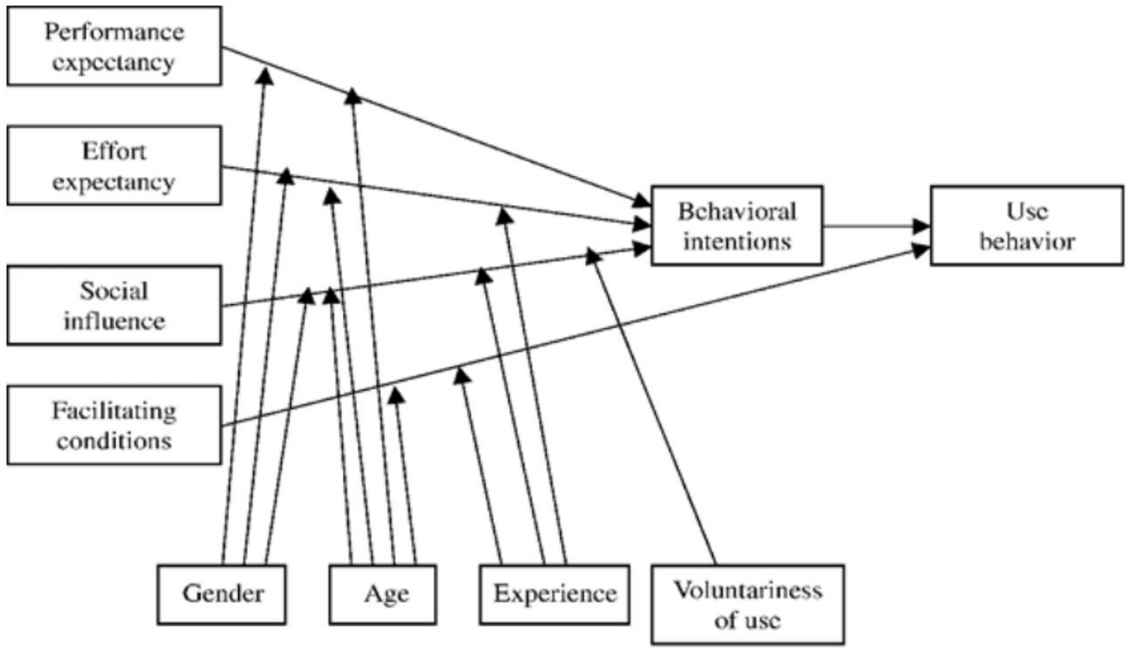

Figure 5.
Theoretical Framework.
Source: Venkatesh, et al. [28].

Table 1.
Models and theories related to the intention to use new technology.

Model or Theory	Author year	Core Variables
Theory of Reasoned Action (TRA)	Fishbein and Ajzen [30]	- Attitude toward behaviour - Subjective norm
Technology Acceptance Model (TAM)	Davis [31] and Davis et al. [32]	- Perceived usefulness - Perceived ease of use - Subjective norm
Theory of Planned Behaviour (TPB)	Ajzen [32] and Harrison, et al. [33]	- Attitude toward behaviour - Subjective norm - Perceived behavioural control
Combined TAM and TPB	Taylor and Todd [34]	- Attitude toward behaviour - Subjective norm - Perceived behavioural control - Perceived usefulness
Model of PC Utilisation (MPCU)	Thompson, et al. [35]	- Job-fit - Complexity - Long-term consequences - Affect towards use - Social factors - Facilitating conditions

Based on the previous literature, the model is widely utilized in studies related to intention to use cryptocurrency. For example, Ter Ji-Xi et al. [4] use UTAUT2, which is extended from the UTAUT model, to analyze the intention to use cryptocurrency as a medium of exchange, while Alomari and Abdullah [36] incorporate two additional variables: security and awareness into the UTAUT model to enhance its explanatory power. Given that this model demonstrates high explanatory power for technology adoption compared to other acceptance theories, UTAUT is selected for this study [36, 37].

2. Materials and Methods

2.1. Youth

The definition of youth varies among different entities, countries, and organizations. According to Clark et al. [39], youth are individuals between 15 and 24 years old. In Malaysia, the Youth Societies and Youth Development (YSYD) Act 2007 defines youth as individuals aged between 15 and 30 years. Similarly, other countries like Indonesia (aged 16 to 30), Philippines (aged 15 to 30), Thailand (aged 15 to 24), South Korea (aged nine to 24), and Australia (aged 12 to 24) have their distinct age ranges for defining youth. Based on past research indicates that young people are particularly inclined towards investing in cryptocurrencies. For example, Gagarina et al. [40] observed that young individuals show more significant interest, understanding, and enthusiasm for cryptocurrencies compared to other age groups. Besides, Manaf and Ariyanti [38] reveal that they are more willing to embrace the risks associated with dealing with relatively new cryptocurrency networks, showcasing a propensity for innovation and adaptation. Hence, it is crucial to investigate the Malaysian youth to understand how their intention to use cryptocurrency as a medium of exchange.

2.2. Behavioral Intention (BI)

BI, a concept in the theory of Reasoned Action developed by Fishbein and Ajzen [30] and further refined by Venkatesh et al. [14], is defined as an individual's desire to engage in specific behavior based on four elements: PE, EE, SI and FC. In the context of cryptocurrency adoption as a medium of exchange, several studies examined the role of four elements in shaping individuals' BI to use cryptocurrencies as a medium of exchange [25, 26].

2.3. Factors influencing BI of Malaysian Youth use Cryptocurrencies as a Medium of Exchange

2.3.1. Performance Expectancy (PE)

PE refers to an individual's belief about the degree to which using a particular technology or system will help them attain gains in productivity or performance [4]. Similarly, Bommer, et al. [16] also interpret the similar interpretation and add that perceived usefulness from TAM also has a similar concept. In the context of cryptocurrency as a medium of exchange, youth are more inclined to embrace and continue using cryptocurrency if they perceive it as easy and convenient to utilize compared to traditional payment methods. When an individual perceives that cryptocurrency can achieve their objective, PE will enhance the consumer's intention to use cryptocurrencies.

2.3.2. Effort Expectancy (EE)

EE refers to the perceived ease of use associated with a technology, which significantly influences BI regarding cryptocurrency as a medium of exchange [28, 39]. Youth are more likely to adopt if they perceive it as straightforward and convenient to use. If the process of acquiring, storing, and transacting with cryptocurrency is perceived as simple and user-friendly, individuals are more inclined to use it for their transactions [4, 10]. Hence, as EE improves, users' BI to use cryptocurrency as a medium of exchange is likely to increase, driving broader adoption and acceptance in the marketplace.

2.3.3. Social Influence (SI)

SI is a crucial factor in shaping BI, particularly for Malaysian youth who are considering cryptocurrency as a medium of exchange. SI, in general, refers to the impact that others have on an individual's thoughts, behaviors, and attitudes. In the context of cryptocurrency usage, Arias-Oliva, et al. [29] define SI as the influence of an individual by others on the practice of cryptocurrency. Delfabbro, et al. [40] further emphasize that SI encompasses efforts to alter another person's behaviors, whether consciously or unconsciously, making it highly relevant in shaping intentions, especially emerging technologies like cryptocurrency.

Given that the cryptocurrency system is currently still new, not well-established, and has decentralized features in which the system works without a central authority, this raises the argument of whether cryptocurrency is legal to use as a medium of exchange. Social influence plays a significant role in shaping behavioral intentions to use cryptocurrency as a medium of exchange. This is because support or endorsement from a broader cryptocurrency community becomes important in building trust and normalizing its use [10]. When youth observe growing acceptance and adoption of cryptocurrency as a medium of exchange from influencers or close contacts, they may feel more comfortable exploring it as a transactional tool. Such peer influence is particularly important among young people, who tend to be more impressionable and sensitive to social cues and trends.

2.3.4. Facilitating Conditions (FC)

FC, as conceptualized in the Technology Acceptance Model (TAM), refers to the extent to which individuals perceive that the necessary resources and support are available to facilitate the use of a technology Davis [31]; Venkatesh, et al. [28] and Venkatesh et al. [42]. Castaldi [5] further explaining that example in the necessary resources and support. For example, the necessary resources could be infrastructures and equipment and support such as training and development or the provision of ongoing support and assistance to technology users. FC can be seen as either facilitators or barriers in an environment and can come in the form of technical infrastructure and organization that promotes a new system [28]. Hence, if youth have the necessary resources and support, they will be more likely to use cryptocurrency as a medium of exchange.

2.4. Literature Gap

One significant gap in the existing literature lies in the need for more understanding of the BI to use cryptocurrency as a medium of exchange, particularly from youth perspectives. While numerous studies have investigated cryptocurrency adoption and usage behaviors, a substantial amount of research needs to consider the viewpoints of young individuals when it comes to using cryptocurrencies for transactions. Existing literature primarily focuses on general consumer views and often lacks targeted examinations of youth demographics [25, 26]. Moreover, extant research has produced conflicting findings regarding the role of social influence within the UTAUT framework [26, 41]. This gap highlights the need for specific research into the BI of youth regarding cryptocurrency usage as a medium of exchange.

2.5. Development of Hypothesis

2.5.1. Relationship between PE and BI

Previous studies conducted in both developing and developed countries have consistently demonstrated the significant positive impact of PE in explaining cryptocurrency acceptance and consumers' intention to use it. For instance, research on the intention to use cryptocurrency in Spain conducted by Arias-Oliva et al. [29], as well as studies on electronic payment with cryptocurrency by Mendoza-Tello et al. [45] and Bitcoin acceptance in Indonesia by Gunawan and Novendra [42] and in China by Shahzad et al. [47]. Similarly, studies conducted in the context of Malaysia have also revealed a positive and significant relationship between PE and intention to use cryptocurrency. Research by Farhana and Muthaiyah [17], Han et al. [27], and Lee et al. [10] has all found that PE plays a significant role in predicting cryptocurrency usage intention in Malaysia. Therefore, based on the existing literature, this study hypothesizes that PE will positively influence the intention to use cryptocurrency as a medium of exchange among Malaysian youth.

H_1: PE has a positive and significant effect on BI's use of cryptocurrencies in Malaysia.

2.5.2. Relationship between EE and BI

Empirical studies in various contexts demonstrate that EE significantly influences Behavioral Intention (BI). In developing countries characterized by weak financial infrastructure, EE is identified as a critical determinant of mobile payment adoption [43]. Similarly, Sánchez-Torres et al. [49] found that it positively influences the adoption of e-banking services in these regions. In the cryptocurrency context, previous studies conducted in various countries have shown that EE has a positive influence on BI to use cryptocurrencies, as evidenced in studies from Spain and Indonesia [41]. Similarly, in the context of Malaysia, past research also indicates a positive significant relationship between EE and BI [44]. As a result, this study will hypothesize as shown below.

H_2: EE has a positive and significant impact on BI's use of cryptocurrencies in Malaysia.

2.5.3. Relationship between SI and BI

Prior studies have consistently demonstrated that SI positively affects the BI in various financial systems or services. For example, Farhana and Muthaiyah [17] discovered that SI helps explain consumer intention and usage behavior in mobile banking adoption. Besides, Hussain et al. [48] revealed that SI significantly influences the BI in mobile payment adoption. However, in the context of cryptocurrency adoption, conflicting results have emerged in past literature. According to Farhana and Muthaiyah [17] and Kumpajaya and Dhewanto [44], both studies conducted in Malaysia found that SI positively

influences the intention to use cryptocurrency. Similarly, a study conducted in Saudi Arabia has a positive impact on BI due to the use of cryptocurrency [36]. Conversely, Arias-Oliva et al. [29] observed that SI is not significant in explaining the BI to adopt cryptocurrency in Spain. This aligns with past research conducted in Malaysia [26]. Given the conflicting evidence, this study decided to follow the mainstream findings and proposed the hypothesis shown below.

H_3: SI has a positive and significant effect on BI's use of cryptocurrencies in Malaysia.

2.5.4. Relationship between FC and BI

Past literature consistently demonstrates a positive relationship between FC and the adoption or intention to use various digital financial services and technologies across different countries. Studies conducted in Malaysia and Indonesia reveal that the FC positively influences BI or adoption of e-money, mobile payment, e-dinar, bitcoin, and blockchain technology [38, 42, 45, 46]. While Wei, et al. [14] suggest that FC's impact may vary depending on the country's level of development, with significant effects observed in developed countries like the USA but not in developing countries like India, other studies show that FC positively affects financial technology usage in both developed and developing countries [47-49]. Moreover, FC has been identified as a critical factor influencing intention or usage behaviors in various contexts, including cryptocurrency acceptance in Spain [29]. Bitcoin acceptance in Indonesia [42] and intention to use cryptocurrency as a medium of exchange [24]. Therefore, based on this literature, it is hypothesized that FC positively influences consumers' BI to use cryptocurrencies in Malaysia, given the supportive environment characterized by adequate technical infrastructure and organizational support typically associated with the adoption of digital financial services and technologies.

H_4: FC has a positive and significant impact on BI using cryptocurrencies in Malaysia.

2.6. Conceptual Framework

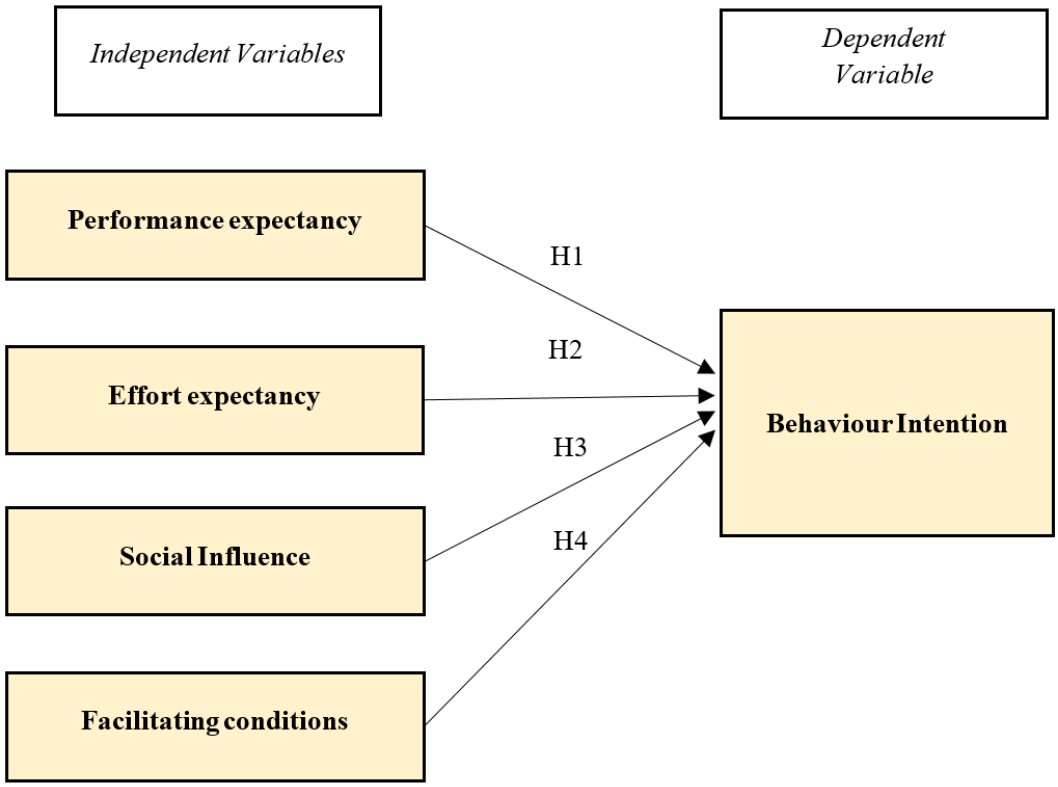

Figure 6.
Conceptual Framework.

2.7. Methodology

2.7.1. Research Design.

This study was designed using several methods, including a quantitative approach and a cross-sectional study. Quantitative approaches are defined as methods that use numerical measurement and analysis through questionnaires, surveys, and polls to fulfill research goals [50, 51]. Through quantitative research, it helps to determine the relationship between independent and dependent variables through statistical approaches. Besides, the study adopted a cross-sectional design, which captures a single snapshot of data at a specific point in time [52]. Therefore, this study is designed to collect data within a defined timeframe, which is set to 3 weeks to collect data.

2.7.2. Research Sample

G*Power software was used to determine the sample size for this research as it allows for the calculation of sample sizes needed for a variety of statistical analyses given the desired power, effect size, and significance level. Given the nature of the

study and the need to test hypotheses, a sufficient sample size was determined to ensure the statistical power of the analysis. Referring to Figure 3.1, power (1 - β err prob) = 0.95 represents the 95% confidence level, and α err prob = 0.05 represents the 5% significance level. The number of predictors equals four, as four independent variables are tested in this study. The final value for the inserted effect size (f^2) is 0.15. The G*Power generated a minimum sample size of 124, which means that 124 respondents needed to be collected. Therefore, the study aims to collect a minimum of 124 data points from target respondents.

Given the anonymity and decentralized nature of cryptocurrencies, it is challenging to access a comprehensive and centralized record of Malaysian cryptocurrency users [4]. For that reason, this research used non-probability sampling to identify and recruit participants. This study is particularly suited to a snowball sampling approach because the researcher makes use of the initial respondents network to identify other respondents for the study who fit the criteria for the study [53]. This method is effective when dealing with populations that may be difficult to access or identify, such as cryptocurrency users, who are often dispersed and operate in less formalized communities.

To enhance practicality and accessibility, the study combines snowball sampling with convenience sampling. The convenience sampling approach is utilized to identify initial respondents from the target demographic which is the Malaysian youth aged 18 to 30 in Klang Valley. These participants are then encouraged to refer others within their networks who also fit the inclusion criteria. The use of convenience sampling is justified by its efficiency in reaching a digitally active demographic through platforms such as social media and online forums, which align with the study's objectives and resource constraints [50, 52].

This dual approach ensures that the sampling method will be consistent with the study's goal of understanding BI among Malaysian youth who use cryptocurrency as a medium of exchange. It also fills the gap of practical and timely data collection within the scope of the research timeframe. Though their potential for generalizability may be limited, non-probability sampling is suitable for exploratory work, such as this, where the aim is to uncover behavioral patterns within a particular demographic [52]. The study uses snowball and convenience sampling, which maximizes access to a niche population while maintaining a focus on the feasibility of data collection.

2.7.3. Research Procedure

The research procedure for data collection involves administering an online questionnaire to participants. Initially, the questionnaire was designed using Google Forms to gather relevant information pertaining to the variables under investigation, including PE, EE, SI, FC, and BI for using cryptocurrency as a medium of exchange. Subsequently, the Google Form will be distributed through various digital platforms, including social media channels such as WhatsApp and Instagram. These platforms were chosen because they offer convenient and widespread access to the target demographic of Malaysian youth. In the questionnaire, participants will be provided with clear instructions for each section, which they can complete at their convenience. The data collected through the online questionnaire will be stored securely and analyzed using appropriate statistical methods to effectively test the research hypotheses.

An online questionnaire was used to collect the data to test the hypothesis and evaluate the theoretical framework. The questionnaire was developed and comprises three sections: demographic, independent, and dependent variables. In section 1, demographics are split into two parts: personal information and experience. Each part has provided close-ended questions guided by past research, except for age, which will have an open-ended question for respondents to fill up [26]. In section 2, each variable has around 3 to 4 questions, and there are 18 questions in total. All the variables were measured using the five-point Likert scale (ranging from 1 to 5, which represents (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, and (5) strongly agree).

3. Result

3.1. Demographic Profile

The target respondents of this study are Malaysian youth living in Klang Valley in the age range of 18-30 years old. After running through data cleaning and filtering out unqualified respondents, such as those who live outside Klang Valley and have not heard of cryptocurrency, a total of 300 valid data points were collected. Table 1 describes the demographic profile of the respondents, and a short explanation is provided in the following section.

Table 2.
Summary of demographic profile.

Items		Options	Frequency, (N)	Percentage
Gender		Female	150	50.0%
		Male	150	50.0%
Age		18-21 years old	39	13.0%
		22-25 years old	145	48.3%
		26-30 years old	116	38.7%
Education level		SPM	33	11.0%
		STPM/ Pre-U/ A-Level /Certification	56	18.7%
		Diploma	65	21.7%
		Degree	124	41.3%
		Master	22	7.3%
Occupation		Self-employed	45	15.0%
		Public sector employee	35	11.7%
		Private sector employee	133	44.3%
		Student	81	27.0%
		Others	6	2.0%
Race		Malay	57	19.0%
		Chinese	180	60.0%
		Indian	50	16.7%
		Other	13	4.3%
Monthly income range		< RM 1,000	75	25.0%
		RM 1, 001 to RM 3,000	76	25.3%
		RM 3,001 to RM 5,000	102	34.0%
		RM 5,001 to RM 7,000	33	11.0%
		RM 7,001 to RM 9,000	9	3.0%
		RM 9,001 and above.	5	1.7%
Experience on Cryptocurrency	Have you heard of cryptocurrency?	Bitcoin (BTC)	274	47.7%
		Ethereum (ETH)	91	15.8%
		Tether (USDT)	71	12.3%
		Binance Coin (BNB)	96	16.7%
		Ripple (XRP)	41	7.1%
		Others	2	0.3%
	How long have you been using cryptocurrency?	Never	177	59.0%
		<1 year	50	12.3%
		1 - <2 years	37	4.9%
		2 - 3 years	22	7.3%
		> 3 years	14	4.7%

3.1.1. Gender

The sample is evenly divided between male and female respondents, with each group represented by 150 individuals, making up 50.0% of the total sample. This balanced gender distribution ensures that perspectives from male and female respondents are equally considered in the analysis and minimizes gender bias in the results.

3.1.2. Age

Most respondents are between 22-25 years old, accounting for 48.3% of the sample (145 respondents). The second-largest age group is 26-30 years old, comprising 38.7% (116 respondents). The youngest group, aged 18-21 years old, represents 13.0% (39 respondents).

3.1.3. Education Level

Most respondents hold a degree, with 41.3% (124 respondents) falling into this category. This is followed by those with a diploma at about 21.7% (65 respondents), and STPM/Pre-U/A-Level/Certification qualifications at about 18.7% (56 respondents). A smaller proportion has completed SPM at 11.0% (33 respondents), while 7.3% (22 respondents) hold a master's degree. This indicates that the sample is relatively well-educated, which could be important for understanding attitudes toward cryptocurrencies, as higher education levels are often associated with greater financial literacy and technology adoption.

3.1.4. Occupation

The largest group of respondents is private sector employees, making up 44.3% (133 respondents). Students account for 27.0% (81 respondents), followed by self-employed individuals at 15.0% (45 respondents). Public sector employees represent 11.7% (35 respondents), and a small group (2.0%, 6 respondents) falls into the 'Others' category, which includes freelancers.

This indicates a diverse range of occupational backgrounds that can offer varied insights into cryptocurrency adoption across different employment sectors.

3.1.5. Race

Most respondents are Chinese, comprising 60.0% (180 respondents) of the sample. Malay respondents make up 19.0% (57 respondents), while Indian respondents account for 16.7% (50 respondents). The remaining 4.3% (13 respondents) are from other racial backgrounds, such as Iban, Singh, Dayak, Bidayuh, Melanau, and Kadazan. This distribution reflects a diverse ethnic composition, allowing for a broader understanding of how different cultural backgrounds may influence cryptocurrency usage.

3.1.6. Monthly Income Range

The largest income group consists of those earning RM 3,001 to RM 5,000 per month (34.0%, 102 respondents), followed by those earning RM 1,001 to RM 3,000 (25.3%, 76 respondents) and those earning less than RM 1,000 (25.0%, 75 respondents). Smaller portions of respondents fall into the higher-income brackets: RM 5,001 to RM 7,000 (11.0%, 33 respondents), RM 7,001 to RM 9,000 (3.0%, 9 respondents), and RM 9,001 and above (1.7%, 5 respondents). This distribution indicates that the sample is predominantly middle-income, which reflects the broader population in Malaysia and may influence their ability or willingness to invest in cryptocurrency.

3.1.7. Experience with Cryptocurrency

Regarding cryptocurrency awareness, 47.7% (274 respondents) have heard of Bitcoin (BTC), followed by Binance Coin (BNB) at 16.7% (96 respondents) and Ethereum (ETH) at 15.8% (91 respondents). Other cryptocurrencies, such as Tether (USDT) and Ripple (XRP), are known to 12.3% (71 respondents) and 7.1% (41 respondents), respectively. These results indicate that Bitcoin remains the most well-known cryptocurrency.

Regarding actual cryptocurrency usage, 25.0% (177 respondents) have never used cryptocurrency. Among those who have used cryptocurrency, 25.3% (50 respondents) have been using it for less than a year, while 34.0% (14 respondents) have used it for 1 to less than 2 years. Additionally, 11.0% (37 respondents) have been using cryptocurrency for 2 to 3 years, and a small percentage (1.7%, 177 respondents) have been using it for more than 3 years. This suggests that a significant portion of respondents are relatively new to cryptocurrency.

Table 3.
Model summary.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.750[a]	0.562	0.556	0.74251

Note: a. Predictors: (Constant), AFC, ASI, APE, AEE.

3.2. Multiple Regression Analysis

Table 3 shows that the adjusted R-squared value is 0.556, equivalent to 55.6%, which indicates that the variation in BI can be explained by the variation in the four independent variables.

Table 4.
ANOVA summary.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	208.909	4	52.227	94.731	0.000[b]
	Residual	162.641	295	0.551		
	Total	371.550	299			

Note: a. Dependent Variable: ABI.
b. Predictors: (Constant), AFC, ASI, APE, AEE.

Table 4 above shows that the model is significant as a p-value of the F-test =0.000 is less than the significance level (α) of 0.05. As the model is significant, it reveals that at least 1 independent variable has explanatory power over the dependent variable, which will be further discussed in the following table.

Table 5.
Coefficient summary.

Model		Coefficients		t	Sig.
		Beta	Std. Error		
1	(Constant)	0.602	0.141	4.257	0.000
	APE	0.275	0.056	4.881	0.000
	AEE	0.237	0.059	4.008	0.000
	ASI	0.241	0.047	5.079	0.000
	AFC	0.114	0.057	2.004	0.046

Note: a. Dependent Variable: ABI.

Given the hypothesis testing as below.

H_0: The independent variable has no relationship with the behavioral intention to use cryptocurrency as a medium of exchange.

H_1: The independent variable has a relationship with the behavioral intention to use cryptocurrency as a medium of exchange.

Rule of thumb: p-value <0.05 reject H0; otherwise, do not reject.

Since three independent variables show p-value < 0.05, we rejected H0, showing a significant relationship between independent variables (APE, AEE, ASI, and AFC) and BI.

Based on Table 5, the predicted equation is shown as:

Behavioral Intention (BI)=0.602 + 0.275 (AFC) + 0.237 (AEE) + 0.241 (ASI) + 0.114 (AFC)

According to their coefficient values, this equation interprets that all the independent variables positively correlate with BI.

Table 6.
Hypothesis result summary.

Hypothesis	Relationship	P-values	Result for hypothesis
H1	PE → BI	0.000	Supported
H2	EE → BI	0.000	Supported
H3	SI → BI	0.000	Supported
H4	FC → BI	0.046	Supported

3.3. Hypothesis Result

All the hypotheses in this research are accepted and the summary is shown in Table 6. The findings conclude that the model (PE, EE, SI and FC) is statistically significant.

4. Discussion

This study investigates the behavioral intention (BI) of Malaysian youth using cryptocurrency as a medium of exchange, focusing on four UTAUT model variables: performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC). The findings reveal that all four variables significantly influence BI, albeit with varying degrees of impact. This discussion interprets these findings, compares them with prior research, and explores their broader implications.

4.1. Performance Expectancy (PE)

Based on hypothesis 1, the analysis revealed that PE significantly influences BI to use cryptocurrency as a medium of exchange with a p-value of less than 0.05. This indicates that Malaysian youth expect cryptocurrency to enhance their ability to achieve goals, particularly in terms of financial autonomy and transaction efficiency. For example, using this payment technology is useful and enables them to complete tasks effectively [47]. This finding aligns with prior studies in developed contexts such as Arias-Oliva et al. [29] and developing contexts such as Gillies et al. [26]; Gunawan and Novendra [42]; Shahzad et al. [47]; Ter Ji-Xi, et al. [4] and Lee et al. [10]. Their studies commonly highlighted that users are more likely to adopt cryptocurrency when they find it beneficial for achieving personal or professional goals. Therefore, this study shows that Malaysian youth perceive the advantages of cryptocurrency, such as faster transactions and lower fees compared to traditional financial systems. However, a mean score for PE in descriptive statistics suggests that while respondents recognize the potential of cryptocurrency, they remain cautious about using cryptocurrency as a payment method due to legal uncertainties and its limited acceptance in mainstream commerce.

4.2. Effort Expectancy (EE)

According to hypothesis 2, the EE result indicated a significant impact on BI, with p = 0.000 less than 0.05. This reflects the importance of ease of use when adopting cryptocurrency. This finding supports and aligns with past studies in Spain and Indonesia [41]. Similarly, in the context of Malaysia, past research also indicates a positive significant relationship between EE and BI [42]. Although EE is significant, the observed mean value for EE in descriptive statistics identified many Malaysian youth as understanding and utilizing cryptocurrency systems for transactions, which remains a challenge. This finding highlights the need to improve the user experience of cryptocurrency platforms. Simplified interfaces, educational tools, and community-led training programs can address these concerns. Moreover, the platforms must ensure multilingual support, particularly in Bahasa Malaysia, English and Mandarin, which could make cryptocurrency platforms more accessible to a diverse youth demographic in Malaysia.

4.3. Social Influence (SI)

Hypothesis 3 examines and processes that SI was a significant predictor of BI a p-value = 0.000, which is less than 0.05. This indicates that social factors such as family, relatives, friends, and influencers influence the intention of Malaysian youth to use cryptocurrency. This finding aligns with Alomari and Abdullah [36], Farhana and Muthaiyah [19], and Kumpajaya and Dhewanto [41], which discovered that SI positively influences the intention to use cryptocurrency. However, the mean values suggest variability in the strength of SI. While some respondents may heavily rely on social validation, others appear more independent in their decision-making. The difference may arise from varying exposure to cryptocurrency-related

discourse within their social networks. To maximize the power of social impact, cryptocurrency enthusiasts should utilize social media initiatives and partnerships with influencers that connect with Malaysian youth.

4.4. Facilitating Conditions (FC)

Based on hypothesis 4, FC shows that it significantly influenced BI where p = 0.046 less than 0.05. Respondents acknowledged the importance of adequate resources, technical infrastructure, and support for cryptocurrency use. This finding is consistent with the literature, which emphasizes the critical role of FC in cryptocurrency adoption [29, 42]. However, the mean value for FC highlights existing gaps in Malaysia's cryptocurrency ecosystem. Many respondents reported challenges related to limited merchant acceptance and a lack of technical support. These barriers may discourage youth from fully adopting cryptocurrency for transactions. As a result, policy interventions, such as incentives for businesses to accept cryptocurrency and investment in secure payment infrastructures, can help address these issues. In addition, public-private partnerships such as government collaboration with Luno Exchange could enhance the availability of cryptocurrency-compatible technologies, ensuring a supportive environment for its adoption.

5. Conclusion

5.1. Theoretical Implications

This study makes significant theoretical contributions by extending the scope and applicability of the Unified Theory of Acceptance and Use of Technology (UTAUT). First, it expands UTAUT's application beyond traditional domains like mobile banking and e-commerce to cryptocurrency adoption as a medium of exchange. By doing so, it demonstrates the framework's relevance to emerging financial technologies, particularly in the context of developing countries. The research indicates that Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), and Facilitating Conditions (FC) are critical determinants of Behavioral Intention (BI). These findings confirm the applicability of UTAUT to developing financial technologies, demonstrating its effectiveness in examining BI to use cryptocurrency as a medium of exchange.

Furthermore, the study addresses an essential gap in the current literature, which has primarily concentrated on developed countries or investment-oriented cryptocurrency applications. The findings highlight the necessity of adapting theoretical frameworks to address the distinct difficulties and opportunities in developing countries. This research strengthens the explanatory ability of UTAUT. It establishes a basis for future studies to modify and tailor the model for other developing countries, hence improving its global relevance.

5.2. Practical Implications

Findings from this study provide actionable insights for policymakers, cryptocurrency service providers, and technology developers who wish to promote cryptocurrency adoption as a medium of exchange in Malaysia. Policymakers can use these results to design supportive regulatory frameworks and infrastructure to remove barriers to adoption, such as security concerns and lack of awareness. For example, implementing educational campaigns targeting youth could increase their understanding of cryptocurrency's practical benefits, including faster transactions and lower costs. They would help to encourage informed adoption and develop public trust in cryptocurrency systems.

The findings make it clear to cryptocurrency service providers such as Luno and Hata that they must simplify the user experience to match EE. Improvements like easy-to-use user interfaces, multi-language support, and accessible tutorials will lower entry barriers for young, unsophisticated users to cryptocurrency technology. Besides, service providers can provide incentives, such as discounts or cashback on cryptocurrency transactions, to boost usage even more.

Technology developers also play a crucial role in fostering adoption by addressing financial concerns. Prioritizing the development of secure, user-friendly digital wallets with good customer support would reduce usability concerns and improve trust among users. Features such as compatibility with already available payment systems and smooth transitions to other devices could bring cryptocurrency payments out of the shadows and into the spotlight. Together, these efforts would build an enabling ecosystem for cryptocurrency adoption among Malaysian youth, serving as a roadmap for stakeholders to align their strategies with user needs and preferences.

5.3. Limitations of Study

Despite its contributions, this study has several limitations that may impact the generalizability and depth of its findings. Firstly, the sample size was limited to approximately 300 respondents from the Klang Valley, which may not fully represent the diverse population of Malaysian youth. Hence, expanding the sample to include participants from other states could provide a more comprehensive understanding of cryptocurrency adoption nationwide. Secondly, the reliance on convenience sampling and snowball sampling introduces potential biases. While this approach was cost-effective, it may not capture a genuinely representative sample of Malaysian youth. Probability sampling methods, such as stratified or random sampling, could mitigate this limitation. Thirdly, the study focused on only four variables under the UTAUT framework. While these factors significantly influence behavioral intention, other variables such as perceived risk, economic conditions, and regulatory factors may also play crucial roles. As a result, the study should incorporate these additional variables that could enhance the model's explanatory power. Finally, the cross-sectional design of the study captures a snapshot of behavior at a single point in time. Given that behavioral intention can change due to the maturity of cryptocurrency systems and regulations in Malaysia, it may not capture the whole picture over a longer period.

5.4. Recommendations for Future Research

Future studies should address the limitations identified and build on this research to provide deeper insights into BI regarding the use of cryptocurrency as a medium of exchange. First, future research should expand the sample to include respondents from all Malaysian states. This would ensure a more representative dataset, capturing regional differences in cryptocurrency adoption. Second, qualitative approaches such as interviews or focus groups, or even a mixed method, are recommended in the future, which could complement quantitative findings by exploring the root causes behind BI [52]. These methods would allow researchers to uncover different potential drivers of BI, such as attitudes toward BI and personal experiences with cryptocurrency. Third, future studies should consider adding variables such as perceived risk, financial and digital literacy, inflation concerns, and regulatory factors to the research model. These factors could provide a more comprehensive understanding of BI, addressing the current model's limitation of explaining only 55.6% of the variance. Fourth, adopting probability sampling methods, such as random or stratified sampling, could reduce potential biases and improve the generalizability of findings. For example, future researchers can collaborate with cryptocurrency exchanges like Luno, Hata, or Bybit to obtain respondent data. This data could also help target a more defined population and enhance data accuracy. Furthermore, longitudinal studies tracking changes in BI over time and in response to regulatory or market developments could provide valuable insights into the evolving cryptocurrency landscape in Malaysia [29]. Finally, the application of grounded theory might be able to provide deeper qualitative insights into the motivation and behavior of users in cryptocurrency adoption situations [54, 55].

5.5. Conclusion

Cryptocurrency, as a potential future digital payment system, offers a compelling alternative to traditional payment methods, particularly among technologically adept and open-to-innovation youth. This study explored the BI of Malaysian youth to use cryptocurrency as a medium of exchange, addressing a significant gap in the literature on cryptocurrency adoption within developing countries [56].

The findings highlight that all four factors of the UTAUT model: PE, EE, SI, and FC, have played significant roles in shaping BI. PE emerged as a crucial determinant, indicating that youth are motivated by cryptocurrency's perceived efficiency and utility in daily transactions. EE revealed that ease of use remains critical, emphasizing the need for intuitive and user-friendly platforms. SI underscores the impact of peers and influencers in normalizing cryptocurrency usage as payment, while FC highlights the importance of good infrastructure and support systems.

While Malaysian youth exhibit moderate interest in adopting cryptocurrency for transactions, this intention can be strengthened by addressing barriers such as usability challenges and limited facilitating conditions. Besides, enhancing users' education on cryptocurrency, streamlining user experiences, and fostering social acceptance are crucial for broader adoption. Future research should analyze alternative factors such as perceived risk, inflation, and regulation, which may provide a comprehensive understanding of behavioral intention. Furthermore, the study suggests expanding the scope to include other states of Malaysia, which could provide further insights into cryptocurrency adoption trends. Moreover, longitudinal studies are recommended in this study, which could capture evolving behavioral patterns as cryptocurrency ecosystems mature.

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