# Modelling the Moderating Role of Government Policy in Cryptocurrency Investment Acceptance

Maslinda Mohd Nadzir<sup>1</sup>, Rabea Abdulrahman Raweh<sup>2</sup>, Hapini Awang<sup>3</sup>, Huda Ibrahim<sup>4</sup>

School of Computing, Universiti Utara Malaysia, Malaysia<sup>1, 2, 4</sup>

Institute for Advanced and Smart Digital Opportunities-School of Computing, Universiti Utara Malaysia, Malaysia<sup>3</sup>

Abstract—Without the requirement for third-party approval, cryptocurrency enables anonymous, secure, quick, and inexpensive financial transactions. Although cryptocurrency is gaining global popularity, its applications are still limited. This research aims to investigate the factors influencing the acceptance of cryptocurrency as an investment tool, focusing on the moderating role of government policy. Using the Unified Theory of Acceptance and Use of Technology (UTAUT) extended with awareness, security, and trust, a survey was conducted with 220 respondents. Structural Equation Modelling (SEM) was employed to analyse the data. The findings revealed that the usage of cryptocurrencies is significantly affected by performance expectancy, facilitating conditions, social influence, awareness, and security in investment. However, trust does not affect the acceptance of cryptocurrency as an investment. The outcomes generate vital insights and strategies for cryptocurrency users, offering a crucial examination for stakeholders and professionals on understanding the underlying dynamics keen of cryptocurrency acceptance in investment.

# *Keywords—Cryptocurrency; acceptance; investment; UTAUT; government policy*

### I. INTRODUCTION

Globalisation has recently improved many facets of people's lives, communication techniques, and company processes, bringing about major changes [1]. Although its effects haven't been uniform, humanity's global interconnectedness has opened up new opportunities [2]. Concerns over the impacts of globalisation have been highlighted by a few corporate scandals that have received criticism [3], [4]. Cryptocurrency, also referred to as payment tokens, crypto tokens, electronic currency, cyber currency, virtual commodities, and virtual assets, these digital currencies work similarly to physical currency but conducts transactions via blockchain technology [5]-[7]. Cryptocurrency allows for peer-to-peer transactions directly, circumventing banks and government regulation, in contrast to traditional currency [8], [9]. This gives cryptocurrency users alternatives to fiat money or debit/credit cards [10]. Bitcoin is considered to be the original cryptocurrency, having been created by Satoshi Nakamoto in 2008.

Cryptocurrency is becoming used for more than only smallscale transactions like Bitcoin trading and hiring programmers [11]. Pizzas were purchased for 10,000 Bitcoins, or \$25 at the time, in the first known business transaction, which is an interesting turning point in the history of Bitcoin. This transaction signalled the start of the currency's exponential rise in value. Within the category of crypto-assets, digital currency

was recognized as an investment and has developed into a speculative tool for short-term trade. Bitcoin, in particular, has become a commonly recognised medium of exchange and transaction currency despite fluctuating significantly [12]. By 2021, the price of a single Bitcoin was about USD 67,000, indicating a significant increase from its launch twelve years earlier. Notably, El Salvador was the first country to officially recognize Bitcoin as a legal tender, which helped it become well-known worldwide [13]. Although its prices are still unregulated, Bitcoin trading works differently because it occurs on licensed exchanges. Since its debut, several new cryptocurrency investment products and exchange-traded funds have been introduced, further solidifying Bitcoin's reputation as a credible trading and investing option. It was thought that cryptocurrency could be a game-changing technology that could solve enduring problems in business and finance [14]. Similarly, as of May 2020, about 5,400 distinct cryptocurrencies were available. Bitcoin has the highest market capitalization at US \$160 billion [15]. This translated into around 300 million cryptocurrency users worldwide, with 5.8 to 11.5 million active wallets. These developments highlight the potential for cryptocurrencies to transform the established financial system and establish themselves as a significant medium of exchange [16]. However, despite these achievements, the scope and geographic reach of Bitcoin adoption and spread are still somewhat constrained. [17]. Consequently, cryptocurrency has yet to fully realise its potential, as widespread acceptance is still lacking [18]. Researchers critically studied cryptocurrencies, mostly concentrating on their application in Western settings [19], [20], as such academic research on cryptocurrencies is still limited, particularly in developing nations [21]. Researchers like [22], [23] observed that although cryptocurrencies are growing in underdeveloped countries, they are still in their infancy. Furthermore, only a limited number of stakeholders regularly interact with this currency, even though many have a sufficient understanding of it [24]. The conversation around cryptocurrencies did not take off until 2011, and reputable peerreviewed journals did not publish articles about cryptocurrency until 2013 [25]. As a result, knowledge about cryptocurrencies is still scarce, especially regarding other well-known financial technologies like internet banking or mobile payments. Furthermore, prior studies on blockchain adoption and cryptocurrencies have mostly concentrated on advanced countries such as the USA and the UK [26], [27].

As a result, a limited amount of literature has been done on the acceptability of cryptocurrencies in the investment field [28], [29]. Likewise, research has frequently disregarded the viewpoints of Bitcoin users [30] and the key determinants of cryptocurrency acceptance, like risk, trust, and security, which have not received enough attention [31]. Specifically, the acceptance of cryptocurrency in investment remains largely unexplored [32], [33]. Correspondingly, policies are significant in promoting broad acceptance and utilization of new financial technology by increasing consumer confidence and awareness [34]. Thus, adopting cutting-edge technology could improve a nation's economic strength and the independence of its people, especially in emerging nations. People have yet to engage in cryptocurrency trading despite the ban. People who trade cryptocurrencies frequently use foreign brokers or more conventional techniques like sending money to broker accounts or paying cash directly to currency owners electronically. Hence, this study seeks to explore the determinants affecting the use of cryptocurrency in investment. It aims to fill existing gaps in the literature on cryptocurrency acceptance by examining investor behaviour in the context of emerging economies. To address this, the study is guided by the following objectives:

- To examine the influence of performance expectancy, social influence, facilitating conditions, awareness, security, and trust on the acceptance of cryptocurrency in investment.
- To test the moderating effect of government policy on the relationship between performance expectancy and social influence with investment acceptance.

Accordingly, the study seeks to answer the following research questions:

- What are the key factors influencing the acceptance of cryptocurrency in investment?
- Does government policy moderate the relationship between performance expectancy/social influence and cryptocurrency investment acceptance?

# II. LITERATURE REVIEW

The acceptance of cryptocurrencies has been of interest to several literature reviews. The technical components of understanding cryptocurrency acceptance have been the topic of one line of research. Perceived benefits and innovation traits (compatibility, observability, and trialability) impacted attitudes towards Bitcoin and the intention to accept it favourably, according to research that combined the risk-benefit concept, transaction cost theory, theory of planned behaviour, and innovation diffusion theory [35]. It was claimed that the behavioural intention to use cryptocurrency was influenced by performance expectancy, effort expectancy, and facilitating factors, according to [36], who used the UTAUT framework. In addition, another study that employed a multi-method approach found that travellers primarily weighed security, usability, and prices when deciding to use cryptocurrency [37]. Furthermore, related studies have recognised technology attachment and blockchain transparency as essential factors for fostering trust in cryptocurrency and promoting its commercial adoption among the public [38]. Scalability, transparency, privacy, credibility, and ethical issues were noted in a systematic assessment as barriers to crypto adoption [39]. Accordingly, studies on Bitcoin usage indicate they are a good choice for investors who want to increase profits while successfully lowering total risk through sensible diversification techniques.

Equally important, current research indicates that human behavioural factors significantly influence cryptocurrency acceptance. According to a comparative study that used the theory of planned behaviour as a framework, social media use influenced consumers' subjective criteria and opinions about Bitcoin, which influenced the acceptance of the cryptocurrency [40]. Similarly, another study emphasized how crucial the theory of planned behaviour is for elucidating intentions to adopt Bitcoin, with attitude, subjective norms, perceived behavioural control, and trust serving as vital motivators [41]. The fuzzy analytic hierarchy exploration assessed the importance of factors influencing Bitcoin investment. Their analysis identifies social influence as the paramount component, succeeded by favourable situations and perceived usefulness [42]. Recently, a comparable study conducted research focused on identifying factors influencing cryptocurrency within investments made by investors from Malaysia. Compatibility, trialability, ease of use, and complexity positively affected cryptocurrency adoption.

Similarly, cryptocurrencies continue to experience low acceptance in investment, and cryptocurrency awareness is frequently associated with younger generations and lower educational levels. Empirical studies investigating the acceptance of cryptocurrencies in investment are severely lacking in this area. However, the majority of research focused on the fundamental elements that affect Bitcoin adoption. On the other hand, the factors influencing the adoption of cryptocurrencies in investment have been the subject of very few studies. Therefore, this study's primary objective is to explore the underlying dynamics influencing investors' acceptance of cryptocurrencies.

Existing research about cryptocurrency acceptance continues to expand, yet several fundamental barriers still need resolution. Current research mainly examines cryptocurrency usage between peers and general usage while missing its adoption patterns in structured investment frameworks. Most previous research has been conducted in studies of technologically advanced Western economies, which has created a gap in empirical understanding regarding regulatory uncertainty and varied technological readiness between developing nations. Examining government policies' effects on individual cryptocurrency investment behaviour remains scarce in current academic research. Consequently, this study tackles these weaknesses to provide a more contextualized, policyaware model of cryptocurrency investment acceptance. It extends the UTAUT by combining it with external variables incorporating awareness, security and trust to better model cryptocurrency investment behaviour. The study adopts government policy as a new moderating factor while integrating important external variables such as awareness, security and trust into its empirical model structure. The extension of the UTAUT model with security awareness and trust dimensions delivers a stronger policy-oriented description of cryptocurrency investment behaviours in emerging markets. Subsequently, this study establishes itself as a significant addition that completes theoretical voids while improving real-world understanding.

#### III. RESEARCH FRAMEWORK

The most significant determinants of behavioural intention to use technology are the UTAUT characteristics of social influence and performance expectancy [43]. Additionally, little research was carried out on concepts like social influence and conducive conditions [44]. The present study was theoretically grounded in the UTAUT paradigm. Security and awareness were added to the UTAUT model to increase its predictability [45]. Users' security concerns prompted the use of the structures. Performance expectancy, social influence, facilitating conditions, awareness, security, and trust were suggested as predictors of whether or not people would embrace cryptocurrency in investment (ACI), as shown in Fig. 1.

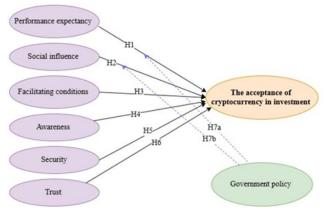


Fig. 1. Research framework.

# IV. HYPOTHESES TESTING

### A. Performance Expectancy

Performance Expectancy (PE) is the level to which individuals believe using cryptocurrencies would help them do their jobs better [46]. Current research on cryptocurrencies indicates that performance expectancy is one important aspect use influencing people's of cryptocurrencies [47]. Cryptocurrencies are structured on the Blockchain technology. In addition to offering more advantages to users, the technology has solved the issues with traditional payment methods like PayPal and credit cards [48]. The introduction of cryptocurrencies is anticipated to increase user convenience in financial transactions. Transaction efficiency, for instance, might be improved [49]. The fund transfer procedure is improved, and transaction costs are reduced when central financial institutions are eliminated [50]. Numerous studies have found that performance expectancy robustly impacts users' behavioural intentions to use Bitcoin [51]. In this regard, performance expectancy was an important driver of behavioural intention to utilise cryptocurrencies [52]. Nonetheless, it was pointed out that performance expectancy had a detrimental effect on behavioural intention to use cryptocurrency [53]. As a result, the findings of the prior investigations contradict one another. The findings are inconclusive. Further research is needed on the relationship between performance expectancy and cryptocurrency acceptance in investment. Thus, this study hypothesises:

H1. Performance expectancy is positively related to the acceptance of cryptocurrency in investment.

## B. Social Influence

Social influence (SI) is related to the degree to which people believe that their family members and peers are influencing them to use cryptocurrencies [54]. According to earlier studies, peer groups, family members, and other current technology users' attitudes greatly impact a person's behavioural intent to use technology [55], [56]. The literature also highlights how effective word-of-mouth is at influencing people's opinions. According to several research studies, the behavioural intention to use innovation is positively influenced by social effects [57]. Similarly, [58] highlighted the impact of social influence as a motivator for users' intent to use cryptocurrency. Therefore, people's inclinations to adopt cryptocurrencies are positively impacted by social influence [58]. However, social influence was reported to have a negligible impact on the acceptance of cryptocurrencies [59]. Social influence significantly impacts consumers' intention to utilize new technology when they know little about it [60]. Since cryptocurrency is a relatively new technology, users don't know much about it. Therefore, it is anticipated that consumers' behavioural intention to embrace Bitcoin as an investment will be positively influenced by friends or loved ones' positive influence regarding the advantages of cryptocurrency. It was claimed that individuals' intentions to adopt cryptocurrencies are positively impacted by social influence [61], [62]. Thus, this study formulates:

H2. Social influence is positively related to the acceptance of cryptocurrency in investment.

# C. Facilitating Conditions

Facilitating Conditions (FC) were characterized as customers' opinions on the accessibility of the technology infrastructure and support required to embrace cryptocurrency [63]. When resources and assistance are available, people are more likely to use technology [64]. Since cryptocurrencies are a quickly developing technology, there isn't enough infrastructure or legal framework to support their use. Additionally, virtual communities centred around cryptocurrencies, such as social media groups and online forums, encourage and counsel people to embrace cryptocurrencies in their financial endeavours. According to earlier research, the conducive circumstance is among the most important predictors of cryptocurrency use intention [65]. However, it has been discovered that the acceptance of cryptocurrencies is not much impacted by facilitating conditions [66]. Consequently, this study proposes:

H3. Facilitating conditions is positively related to the acceptance of cryptocurrency in investment.

### D. Awareness

Awareness (AWAR) is described as a person's understanding of innovation and the advantages of embracing it [67]. According to this study, awareness is the degree to which consumers are aware of cryptocurrencies and their advantages. The significance of awareness in embracing technology was first examined in an innovation diffusion theory [68]. A new technology is cryptocurrency. As a result, users have a limited knowledge of the advantages of cryptocurrencies. Therefore, to increase the perception of its advantages, one must be aware of cryptocurrency services [70]. Several studies have shown that users' propensity to embrace cryptocurrencies is positively impacted by awareness [28], [28], [33]. User acceptance in a contract may be hampered by ignorance of cryptocurrencies [24]. Thus, this study postulates:

H4. Awareness is positively related to the acceptance of cryptocurrency in investment.

# E. Security

Security (SEC) defines how safe a person feels when applying technology when they are online. People avoid using technology because they are anxious about it [39]. Transactions involving cryptocurrencies are carried out online. Potential financial loss, theft, or failure due to cybercrime may worry users [40]. Because of its security, individuals would feel more comfortable utilizing the technology, enabling it to reach its full potential as a cash substitute [41]. If people believe that cryptocurrencies are a safe form of money, they will be more inclined to utilize them [16]. Prior studies have demonstrated that security has a major impact on people's readiness to use digital currencies [17]-[20]. Similarly, a lack of security has negatively affected the desire to embrace Bitcoins as an investment [16]. As a result, more people see Bitcoin as a safe innovation, and they are more likely to apply it. Hence, the current research constructs:

H5. Security is positively related to the acceptance of cryptocurrency in investment.

# F. Trust

Trust (TR) is the readiness to trust someone or something because you think they are reliable. Trust is the belief that a system will be able to carry out all of its intended tasks. Accordingly, trust was divided into two categories: i) behavioural intentions containing ambiguity and vulnerability, and ii) faith or confidence in the reliability of another individual [47]. According to earlier studies, a person's behaviour varies based on their online purchasing confidence [33]. Due to the financial risk involved, online payment systems demand the highest confidence level [24]. Furthermore, it was found that user commitment to online transactions is increased when trust is present [32]. Furthermore, trust has been shown to predict Bitcoin use positively as a payment mechanism [28]. Thus, this study hypothesizes:

H6. Trust is positively related to the acceptance of cryptocurrency in investment.

# G. Government Policy as a Moderator

Government Policy (GP) is related to the role of the government in motivating the application and utilisation of technology [33]. Government policy can be described in this study as the role of government-related regulations covering different rules that facilitate accepting cryptocurrency in investment. It was found that government policy influences many acceptance decisions [34]. One digital technology used in financial transactions is cryptocurrency. As a result, the features of cryptocurrencies and the function of governmental regulations will determine whether or not a person accepts them. One could argue that government policy may impact how much the government facilitates, oversees, and regulates the potential utility of Bitcoin services [35]. The impact of one variable on another is either increased or decreased by a moderator variable

[36]. Government policy has been shown to support people's financial choices, including accepting cryptocurrencies [37]. Government rules, however, make it less likely for consumers to choose to utilize cryptocurrencies [38]. The impact of social influence and performance expectations on adopting cryptocurrencies as investments is then anticipated to be mitigated by government policy. The following theories are investigated:

H7(a) Government policy moderates the relationship between performance expectancy and the acceptance of cryptocurrency in investment.

H7(b). Government policy moderates the relationship between social influence and the acceptance of cryptocurrency in investment.

### V. RESEARCH METHODOLOGY

# A. Data Collection

Only 220 of the 290 questionnaires designed for the sample were filled out and returned, and the study population comprises people interested in investing in cryptocurrencies. As a result, 76% of the response rate was reached. The survey aimed to information on respondents' collect knowledge of cryptocurrency's features and their propensity to embrace it in the future. This data was measured using a Likert-type scale, where, 1 represents strongly disagree, and 7 represents strongly agree. With the necessary adjustments made for the specific setting of this study, the majority of the 28 items in this section were taken from recent Bitcoin literature as well as from previous studies conducted in different situations. The second section of the questionnaire revealed information about the respondents' age, gender, and level of education. The questionnaire was designed and disseminated in English.

# B. Data Analysis and Results

The gathered data was analysed using SPSS version 29 and SEM. The recommendations of [48], [49] and earlier studies in this area served as an inspiration for the selection of these techniques. Table I shows that 61% of respondents were female and 39% of respondents were male. Regarding age grouping, 45.8% of respondents were in the 25 to 34 age range, 16.8% were in the 35 to 44 age range, 30.4% were in the 18 to 24 age range, and 7% were above 44. Sixty-three percent of the respondents had a Bachelor's degree, sixteen percent had a Diploma, six percent had Certificates, and nine percent had a Postgraduate degree.

TABLE I.	DEMOGRAPHIC PROFILE
I ADLL I.	DEMOORALITIC I KOFILE

Demographics	Categories	(%)	
Gender Male Female		39 61	
Age	18-24 25-34 35-44 44 and above	30.4 45.8 16.8 7.0	
Educational Background	Certificate Diploma Bachelor's degree Postgraduate degree Others	6.0 16.0 63.0 9.0 6.0	

In the same way, several crucial metrics, including nomological validity, convergent validity, discriminant validity, and face validity, were included in the analytic process to evaluate the validity and dependability of the structural model employed in the Structural Equation Modelling (SEM) technique. Convergent validity, which ensures that items evaluating a certain idea have a significant amount of common variation, was evaluated using average variance extracted (AVE), factor loadings, and reliability measures (in this case, Cronbach's alpha). Cronbach's alpha AVE and factor loadings of 0.5 or higher are deemed acceptable, whereas an AVE of 0.6 or higher is deemed acceptable by [49].

Table II indicates a high degree of internal consistency among the measures employed to measure each aspect, with Cronbach's alpha values ranging from 0.839 to 0.895. Furthermore, the AVE values, which range from 0.541 to 0.782, are greater than the 0.5 threshold, suggesting that the underlying constructs explain over 50% of the variance in the observed variables. A strong association between the latent constructs and the observable variables is also indicated by the fact that all factor loadings are higher than 0.5. Overall, these findings demonstrate that all prerequisites for convergent validity have been met, confirming the model's attainment of convergent validity. By showing that the items measuring each construct are indicative of the respective underlying constructs and share a significant amount of common variation, this validates the robustness and reliability of the measurement model.

TABLE II. CONVERGENT VALIDITY MEASURE

Variables	Cronbach's Alpha	AVE
PE	0.856	0.541
FC	0.864	0.661
SI	0.895	0.747
AWAR	0.869	0.698
SEC	0.874	0.543
TR	0.839	0.782
GP	0.845	0.785
ACI	0.843	0.786

The discriminant validity of each construct in the model must differ from the other constructions. Relatively, discriminant validity can be evaluated in a variety of ways. The fit indices for the baseline and limited models were then compared, with the connection between the components in this study fixed at 1. Consequently, discriminant validity is attained if there is a significant difference in the fit indicated between the two models. Table III shows that the baseline model's Chisquare (x2) value was 1,449.196 with 643 degrees of freedom, while the limited models' x2 value was 1,607.716 with 545 degrees of freedom (DF). This shows a difference in the degree of freedom of seven and an x2 difference of 1,229.197. The fit indices for the restricted models and baseline models differ dramatically. Accordingly, this model attains discriminant validity, and consulting experts in this field verified the face and nomological validity. Lastly, the findings exposed that the comparative fit index (CFI) is 0.839, and its root mean square error of approximation (RMSEA) is 0.541. For both measures, these levels are acceptable [44], [47], [50]. Therefore, this validates the model as a whole.

TABLE III.	DISCRIMINANT VALIDITY MEASURES
ITIDEE III.	Discranting and the birth intersocrets

Elements	Chi-square	DF
Baseline model	1,449.196	643
Restricted model	1,607.716	638
Changes	158.520	5

### VI. RESEARCH HYPOTHESES

The hypotheses discussed above are tested through path analysis, as shown in Table IV. The findings illustrated that performance expectancy significantly impacts individuals' acceptance of cryptocurrency in investment. Consequently, Hypothesis 1 is supported ( $\beta = 0.052$ , t =1.142, p = 0.127). This result indicates that the ease associated with cryptocurrency will allow users to accept cryptocurrency when investing. This is supported by [15], who stated that behavioural intention to utilise cryptocurrency is hindered when cryptocurrency is difficult. Moreover, social influence significantly affects an individual's behaviour in accepting cryptocurrency in investment. Thus, hypothesis H2 is supported ( $\beta = 0.099$ , t = 2.339, p = 0.010). The results concurred with those of [35], [36], who revealed that behavioural intent toward cryptocurrency acceptance among Saudi Arabian university students is influenced by the views of near and loved ones, such as friends and family, regarding the advantages of cryptocurrencies. Additionally, it was shown that facilitating conditions substantially impacted the adoption of cryptocurrencies in investment. Consequently, ( $\beta = 0.101$ , t = 2.116, p = 0.017) support Hypothesis 3. This result is consistent with [20]. It refers to the political climate, the government's desire to encourage the use of cryptocurrencies in investing, and the laws, circulars, and policies that have been put in place to assist cryptocurrency acceptance.

TABLE IV.	REGRESSION RESULTS
ITIDEE IV.	REGRESSION RESULTS

Hypothesis	Relationship	ß	T Values	p Values	Result
H1	PE -> ACI	0.052	1.142	0.127***	Supported
H2	SI -> ACI	0.101	2.116	0.017***	Supported
H3	FC -> ACI	0.099	2.339	0.010***	Supported
H4	AWAR -> ACI	0.098	2.258	0.012***	Supported
H5	SEC -> ACI	0.276	5.775	0.05	Supported
Н6	$TR \rightarrow ACI$	0.054	1.034	0.015**	Unsupported

Note. \*\*\*indicates a significant level at p < 0.01.,\*\*indicates a significant level at p < 0.05.

All of these characteristics have a major impact on people's decision to embrace cryptocurrencies as an investment. Similarly, people who accept Bitcoin investments were found to be significantly impacted by awareness. Since ( $\beta = 0.098$ , t = 2.258, and p = 0.012), Hypothesis 4 is accepted. This outcome is consistent with [11], who claimed that knowledge and awareness of cryptocurrencies significantly impacted their use. The respondents' ability to obtain general information on cryptocurrencies, including their advantages and potential risks, is a noteworthy indication of awareness.

Regarding the acceptability of cryptocurrencies in investing, the respondents noted a high degree of awareness and expertise, which has positively affected their views of and acceptance of cryptocurrency in investment. Further, security was recognised to significantly affect individuals accepting cryptocurrency in investment. Accordingly, H5 is supported ( $\beta = 0.0276$ , t = 5.775, p = 0.05). This outcome is consistent with Almarashdeh [19], who emphasized users' perceived concerns about the security of financial transactions associated with Bitcoin use.

Nevertheless, trust was found to have no discernible effect on people's behaviour regarding the acceptance of cryptocurrencies in investment, which is contradicted by [8], [9], who noted that users are more likely to trust a currency issued by an authority than a cryptographic currency. As a result, Hypothesis 6 is rejected ( $\beta = 0.054$ , t = 1.034, p = 0.015) in this study for several reasons, including the decentralized nature of the cryptocurrency market, the absence of a central authority in charge of issuance, and the fact that using a reliable third party when transferring money online is not necessary [14]. The findings summarised other determinants rather than trust that could impact individuals who accept cryptocurrency in investments.

Table V shows that the relationship between performance expectancy and the acceptance of cryptocurrencies as an investment is considerably impacted by government regulation. Hypothesis 7a is thus supported ( $\beta$ =0.084, t=2.137, p=0.017). This suggests that government policies significantly shape the influence of performance expectations on the acceptance of cryptocurrencies in investment. This illustrates that the association between performance expectancy and accepting cryptocurrency in investment is strengthened by government policy. This finding could be further explained by the prospect theory, which claims that people make decisions based on how options are framed and are receptive to losses rather than profits [51]. In cryptocurrency, investors who expect positive returns and have high-performance expectations may be more inclined to invest [52]. If considered beneficial in lowering volatility and safeguarding investors, government policy, individuals with high-performance expectancy (positive return expectations) might be more likely to invest [53]. Government policies could enhance this positive perception if perceived as effective in reducing volatility and protecting investors [54]. This would make investors more open to the possible benefits of cryptocurrency, especially in light of restrictions, which could reinforce the positive link between the acceptance of cryptocurrency in investment and performance expectancy [55]. Finally, government policy negatively affected the correlation between SI and the acceptance of crypto in investing.

 TABLE V.
 Results of Government Policy Analysis

Hypothesis	Relationship	ß	T Values	p Values	Result
Н7а	PE > GP	0.084	2.137	0.017**	Positively Supported
H7b	SI > GP	-0.080	1.908	0.028**	Negatively Supported

Note. \*\*indicates a significant level at p < 0.05.

Hypothesis 7b is therefore not supported ( $\beta$ =-0.080, t=1.908, p=0.028). Consequently, the analysis's findings show a negative correlation between social impact and investors' acceptance of cryptocurrencies. This illustrates how the presence of governmental regulation may mitigate the relationship between social influence and the adoption of cryptocurrencies as investments. This finding could be explained by Social Learning Theory [56], which posits that individuals learn by observing and imitating others' behaviours. Regarding cryptocurrency, individuals may be persuaded to invest due to the influence of friends, family, or online communities. However, government policy can introduce uncertainty and complexity to the process, making investors less likely to follow the actions of others [60] mindlessly. They might be more cautious and conduct their research before investing, weakening the direct influence of social pressure. The additional justification that may align with this outcome is related to Uncertainty Reduction Theory, which theorises that individuals seek to reduce uncertainty in situations involving risk [58]. Concerning cryptocurrency, a new and complex investment, individuals might rely heavily on social influence to make decisions. Nevertheless, when governments establish policies, it provides a sense of legitimacy and clarity, potentially reducing the reliance on social cues and leading to more independent decision-making.

# VII. DISCUSSION

Using SEM analysis, this study aimed to investigate the factors influencing the adoption of cryptocurrencies in investments. The results showed that users' adoption of cryptocurrencies as an investment is positively impacted by several elements, which aligns with many previous studies. These include performance expectancy [47]-[48], facilitating conditions [63], social influence [55]-[56], and awareness [67]. However, the acceptance of cryptocurrencies was not much impacted by trust, which has failed to be replicated in past studies [28], [32], [69]. Conceptual hurdles exist in cryptocurrency because its decentralized and pseudonymous systems function without standard trust components like banks or regulators. This can probably be explained by Gunawan and Achmad [39], who noted that new users of decentralized platforms face challenges due to the absence of trusted identifiable entities on these platforms.

### VIII. CONCLUSION

The insights obtained by this study hold considerable value for practitioners, academics, and policymakers, shedding light on aspects of cryptocurrency in investment behaviour that may not align with users' cultural and social values. Consequently, the findings contribute to gaining a deeper comprehension of the dynamics of cryptocurrency acceptance. The study's findings also serves as a basis for promoting user involvement with cryptocurrencies for financial investment. This study explores a topic that has not been experimentally investigated before using the UTAUT model in a new setting. Furthermore, this study offers practitioners and regulators information on crucial elements to encourage cryptocurrency investment and adoption among stakeholders. Cryptocurrencies and similar digital assets offer the potential for more efficient exchange methods than traditional currencies, highlighting the need for further investigation. With swift progressions in financial innovation, fiscal advisors and users should remain current regarding the latest developments in both knowledge and skills. Traditional financial institutions face a serious challenge if they do not adjust to these changes. Users can choose alternative advice platforms that offer more effective, flexible, and affordable services. The results might also lead people to consider cryptocurrencies a good investment choice.

#### IX. LIMITATIONS AND FUTURE RESEARCH

It is essential to consider this study's various possible limitations. First, a self-report survey and cross-sectional research design may restrict causal inferences and miss gradual changes over time [69]. Future research could use experimental designs to overcome this restriction. Second, a complete collection of factors impacting the adoption of cryptocurrencies in investment is not included in the study's suggested model. Consequently, this model needs to be seen as a starting point for additional study in order to create a more thorough understanding of cryptocurrency acceptance in investment. Since many users engage with cryptocurrencies as investment assets, future research would benefit from incorporating inherent features and risks specific to cryptocurrency in investment, such as traceability, price value, and sustainability, and examining their influence on user attitudes toward cryptocurrency acceptance.

Thirdly, although structural equation modelling (SEM) was used in this investigation, alternative theoretical perspectives and methodological approaches could produce additional insights, potentially enriching our understanding of the phenomenon. Lastly, longitudinal research on cryptocurrency adoption could offer valuable perspectives on the evolving dynamics of acceptance behaviour, particularly as it responds to shifts in market trends, regulatory developments, and technological advancements. By addressing these shortcomings, future studies could advance a more sophisticated comprehension of cryptocurrency investment behaviour and its wider ramifications for stakeholders and international financial markets.

#### ACKNOWLEDGMENT

This research was supported by the Ministry of Higher Education (MoHE) of Malaysia through the Fundamental Research Grant Scheme (FRGS/1/2022/ICT03/UUM/02/3).

#### REFERENCES

- A. S. Abd Aziz, N. A. M. Noor, and O. F. Al Mashhour, "The money of the future: A study of the legal challenges facing cryptocurrencies," BiLD Law Journal, vol. 7, no. 1, pp. 21–33, 2022.
- [2] E. M. E. Abdullah, A. A. Rahman, R. Yakob, and D. Muchtar, "Factor influencing the adoption of fintech in investment among Malaysians: A unified theory of acceptance and use of technology (UTAUT) perspectives," J. Adv. Res. Appl. Sci. Eng. Technol., vol. 49, no. 2, pp. 231–247, 2024.

- [3] N. S. N. Abdullah, S. K. Basarud-Din, and N. K. Abdullah, "Investigating factors affecting the investors' intention to accept cryptocurrency investment in Malaysia," Int. J. Econ. Manag., vol. 18, no. 1, pp. 1–19, 2024.
- [4] N. Ahmad and H. Ismail, "Financial literacy and cryptocurrency investment: Challenges and opportunities in Malaysia," J. Financial Educ., vol. 17, no. 2, pp. 67–82, 2023.
- [5] A. Alharbi and O. Sohaib, "Technology readiness and cryptocurrency adoption: PLS-SEM and deep learning neural network analysis," IEEE Access, vol. 9, pp. 21388–21394, 2021. doi: 10.1109/ACCESS.2021.3055785
- [6] Y. Guo, E. Yousef, and M. M. Naseer, "Examining the drivers and economic and social impacts of cryptocurrency adoption," *FinTech*, vol. 4, no. 1, p. 5, 2025.
- [7] T. Carter and S. McBride, "Cognitive biases in cryptocurrency investment: An analysis of investor behavior," J. Behav. Finance, vol. 18, no. 3, pp. 201–217, 2023.
- [8] G. B. Drăgan, W. B. Arfi, V. Tiberius, A. Ammari, and T. Khvatova, "Navigating the green wave: Understanding behavioral antecedents of sustainable cryptocurrency investment," Technol. Forecast. Soc. Change, vol. 210, p. 123909, 2025.
- [9] G. A. Abbasi, L. Y. Tiew, J. Tang, Y. N. Goh, and R. Thurasamy, "The adoption of cryptocurrency as a disruptive force: Deep learning-based dual stage structural equation modelling and artificial neural network analysis," *PLOS ONE*, vol. 16, no. 3, p. e0247582, Mar. 2021, doi: 10.1371/journal.pone.0247582.
- [10] N. Abu Bakar, S. Rosbi, and K. Uzaki, "Cryptocurrency framework diagnostics from Islamic finance perspective: A new insight of bitcoin system transaction," *International Journal of Management Science and Business Administration*, vol. 4, no. 1, pp. 19-28, 2017.
- [11] A. Adapa, F. F.-H. Nah, R. H. Hall, K. Siau, and S. N. Smith, "Factors influencing the adoption of smart wearable devices," *International Journal of Human-Computer Interaction*, vol. 34, no. 5, pp. 399–409, May 2018, doi: 10.1080/10447318.2017.1357902.
- [12] I. Ajzen, "The theory of planned behavior," Organizational Behavior and Human Decision Processes, vol. 50, no. 2, pp. 179-211, Dec. 1991.
- [13] A. Al Shehhi, M. Oudah, and Z. Aung, "Investigating factors behind choosing a cryptocurrency," in 2014 IEEE International Conference on Industrial Engineering and Engineering Management, 2014, pp. 1443-1447, doi: 10.1109/IEEM.2014.7058830.
- [14] J. Campino and S. Yang, "Decoding the cryptocurrency user: An analysis of demographics and sentiments," *Heliyon*, vol. 10, no. 5, 2024.
- [15] H. Lee, "The acceleration of blockchain technology adoption in Taiwan," *Heliyon*, vol. 9, no. 11, 2023.
- [16] A. A. Alalwan, Y. K. Dwivedi, and N. P. Rana, "Factors influencing adoption of mobile banking by Jordanian bank customers: Extending UTAUT2 with trust," *International Journal of Information Management*, vol. 37, no. 3, pp. 99-110, Jun. 2017, doi: 10.1016/j.ijinfomgt.2017.01.002.
- [17] R. Al-Amri, N. H. Zakaria, A. Habbal, and S. Hassan, "Cryptocurrency adoption: Current stage, opportunities, and open challenges," *International Journal of Advanced Computer Research*, vol. 9, no. 44, pp. 293–307, Mar. 2019, doi: 10.19101/IJACR.PID43.
- [18] M. Y. Ahmed, S. A. Sarkodie, and T. Leirvik, "Mutual coupling between stock market and cryptocurrencies," *Heliyon*, vol. 9, no. 5, 2023.
- [19] A. Alharbi and O. Sohaib, "Technology readiness and cryptocurrency adoption: PLS-SEM and deep learning neural network analysis," *IEEE Access*, vol. 9, pp. 21388–21394, Feb. 2021, doi: 10.1109/ACCESS.2021.3055785.
- [20] S. A. Ali, N. L. Alomari, and N. L. Abdullah, "Factors influencing the behavioral intention to use cryptocurrency among Saudi Arabian public university students: Moderating role of financial literacy," *Cogent Business & Management*, vol. 10, no. 1, p. 2178092, Feb. 2023, doi: 10.1080/23311975.2023.2178092.
- [21] D. A. Almajali, R. E. Masa'Deh, and Z. M. Dahalin, "Factors influencing the adoption of cryptocurrency in Jordan: An application of the extended TRA model," *Cogent Social Sciences*, vol. 8, no. 1, p. 2103901, Jul. 2022, doi: 10.1080/23311886.2022.2103901.

- [22] Y. H. Al-Mamary, A. Shamsuddin, N. A. Abdul Hamid, and M. H. Al-Maamari, "Adoption of management information systems in context of Yemeni organisations: A structural equation modelling approach," *Journal of Digital Information Management*, vol. 13, no. 6, pp. 510-517, 2015.
- [23] I. Almarashdeh, H. Bouzkraoui, A. Azouaoui, H. Youssef, L. Niharmine, A. A. Rahman, S. S. S. Yahaya, A. M. A. Atta, D. A. Egbe, and B. M. Murimo, "An overview of technology evolution: Investigating the factors influencing non-bitcoins users to adopt bitcoins as online payment transaction method," *Journal of Theoretical and Applied Information Technology*, vol. 96, no. 13, pp. 4129-4145, 2018. [Online]. Available: http://www.jatit.org/volumes/Vol96No13/1Vol96No13.pdf
- [24] A. A. Al-Naimi, L. F. Alshouha, R. Kanakriyah, R. Al-Hindawi, and M. A. Alnaimi, "Capital structure, board size, and firm performance: Evidence from Jordan," Academy of Strategic Management Journal, vol. 20, no. 6S, pp. 1-10, 2021.
- [25] M. Arias-Oliva, J. Pelegrín-Borondo, and G. Matías-Clavero, "Variables influencing cryptocurrency use: A technology acceptance model in Spain," *Frontiers in Psychology*, vol. 10, p. 475, Mar. 2019, doi: 10.3389/fpsyg.2019.00475.
- [26] S. Asif, "The halal and haram aspect of cryptocurrencies in Islam," *Journal of Islamic Banking and Finance*, vol. 35, no. 2, pp. 91-101, Jul. 2018. [Online]. Available: http://dx.doi.org/10.13140/RG.2.2.29593.52326
- [27] A. F. Aysan, H. B. Demirtaş, and M. Saraç, "The ascent of bitcoin: Bibliometric analysis of bitcoin research," *Journal of Risk and Financial Management*, vol. 14, no. 9, p. 427, Sep. 2021, doi: 10.3390/jrfm14090427.
- [28] A. W. Baur, J. Bühler, M. Bick, and C. S. Bonorden, "Cryptocurrencies as a disruption? Empirical findings on user adoption and future potential of Bitcoin and co.," in Conference on e-Business, e-Services and e-Society, 2015.
- [29] P. K. Beh, Y. Ganesan, M. Iranmanesh, and B. Foroughi, "Using smartwatches for fitness and health monitoring: The UTAUT2 combined with threat appraisal as moderators," *Behavior & Information Technology*, vol. 40, no. 3, pp. 282-299, 2021, doi: 10.1080/0144929X.2019.1685597.
- [30] J. Bohr and M. Bashir, "Who uses bitcoin? An exploration of the bitcoin community," in 2014 Twelfth Annual International Conference on Privacy, Security and Trust, 2014, pp. 94-101, doi: 10.1109/PST.2014.6890928.
- [31] A. A. Broyles, T. Leingpitul, R. H. Ross, and B. M. Foster, "Brand equity's antecedent/consequence relationships in cross-cultural settings," *Journal of Product and Brand Management*, vol. 19, no. 3, pp. 159-169, 2010.
- [32] Y. Chang, S. F. Wong, H. Lee, and S. P. Jeong, "What motivates Chinese consumers to adopt FinTech services: A regulatory focus theory," in Proceedings of the 18th Annual International Conference on Electronic Commerce: e-Commerce in Smart Connected World, 2016, pp. 1-7, doi: 10.1145/2971603.2971613.
- [33] C. Chen, "Identifying significant factors influencing consumer trust in an online travel site," *Information Technology and Tourism*, vol. 8, no. 3-4, pp. 197-214, Oct. 2006.
- [34] Comarkets, "Top 100 cryptocurrencies by market capitalisation," May 17, 2020. [Online]. Available: https://coinmarketcap.com/
- [35] Deloitte, "State-sponsored cryptocurrency: Adapting the best of Bitcoin's innovation to the payments ecosystem," May 18, 2016.
- [36] N. A. Diep, C. Cocquyt, C. Zhu, and T. Vanwing, "Predicting adult learners' online participation: Effects of altruism, performance expectancy, and social capital," *Computers & Education*, vol. 101, pp. 84-101, Oct. 2016, doi: 10.1016/j.compedu.2016.06.002.
- [37] T. Ermakova, B. Fabian, A. Baumann, M. Izmailov, and H. Krasnova, "Bitcoin: Drivers and impediments," SSRN, Aug. 2017, doi: 10.2139/ssrn.3017190.
- [38] A. G. Fernando and E. C. X. Aw, "What do consumers want? A methodological framework to identify latent needs," *Journal of Marketing Analytics*, vol. 8, no. 2, pp. 65-75, Apr. 2020, doi: 10.1057/s41270-020-00077-4.

- [39] H. Gunawan and D. Achmad, "Analysis of the factors affecting behavioral intention in using cryptocurrency in Indonesia using the unified theory of acceptance and use of technology (UTAUT)," ComTech: Computer, *Mathematics and Engineering Applications*, vol. 8, no. 4, pp. 241-248, Oct. 2017, doi: 10.21512/comtech.v8i4.4452.
- [40] W. K. Härdle, C. Harvey, and R. Reule, "Understanding cryptocurrencies," *Journal of Financial Econometrics*, vol. 18, no. 2, pp. 181-208, Apr. 2020, doi: 10.1093/jjfinec/nbz033.
- [41] M. A. Hossain, Y. Bao, and N. Hasan, "Perceived trust and purchase intention: Considering customer awareness and association toward organic foods as mediator variables," *Journal of International Food & Agribusiness Marketing*, vol. 32, no. 3, pp. 236-261, May 2020.
- [42] K. L. Hsiao and C. Yang, "The intellectual development of the technology acceptance model: A co-citation analysis," *International Journal of Information Management*, vol. 31, no. 2, pp. 128-136, Apr. 2011, doi: 10.1016/j.ijinfomgt.2010.07.003.
- [43] S.-H. Hsu, "Understanding cryptocurrency adoption and its determinants," *Journal of Organizational and End User Computing*, vol. 34, no. 2, pp. 1-19, Mar. 2022, doi: 10.4018/JOEUC.20220301.oa1.
- [44] H. C. Huang, H. Y. Lin, and C. S. Chiu, "Assessing the influences of different factors on the intention to use cryptocurrency: An extension of the UTAUT model," *Sustainability*, vol. 15, no. 10, p. 7973, May 2023, doi: 10.3390/su15107973.
- [45] R. A. Järvinen and R. Suomi, "Understanding consumers' online shopping behavior: An integration of the theory of planned behavior and the technology acceptance model," *Journal of Theoretical and Applied Electronic Commerce Research*, vol. 11, no. 3, pp. 22-39, Sep. 2016, doi: 10.4067/S0718-18762016000300003.
- [46] Y. J. Jeon and R. N. Ghosh, "Regulatory uncertainty and the bitcoin ecosystem: A call for standardisation," in 2017 IEEE Technology and Engineering Management Conference (TEMSCON), 2017, pp. 156-160, doi: 10.1109/TEMSCON.2017.7998380.
- [47] D. Jung, J. S. Hwang, and H. S. Kim, "Determinants of users' intention to use the Internet as a new information service: Focusing on the interactivity and information quality of the Internet," *Journal of Information Technology Applications & Management*, vol. 24, no. 1, pp. 27-42, 2017.
- [48] K. Kalaignanam and R. Varadarajan, "Customer relationship management and firm performance: An empirical analysis," *Journal of Marketing*, vol. 70, no. 4, pp. 146-165, Oct. 2006, doi: 10.1509/jmkg.70.4.146.
- [49] Y. Kim, D. J. Kim, and K. Wachter, "A study of mobile user engagement (MoEN): Engagement motivations, perceived value, satisfaction, and continued engagement intention," *Decision Support Systems*, vol. 56, pp. 361-370, Apr. 2013, doi: 10.1016/j.dss.2013.07.002.
- [50] C. M. Kong, "Regulatory issues on cryptocurrency and blockchain technology," SSRN, May 2017, doi: 10.2139/ssrn.2971554.
- [51] S. Kraus, C. Palmer, N. Kailer, F. L. Kallinger, and J. Spitzer, "Digital entrepreneurship: A research agenda on new business models for the twenty-first century," *International Journal of Entrepreneurial Behavior* & *Research*, vol. 25, no. 2, pp. 353-375, Mar. 2019, doi: 10.1108/IJEBR-06-2018-0425.
- [52] L. Kristoufek, "What are the main drivers of the bitcoin price? Evidence from wavelet coherence analysis," *PLOS ONE*, vol. 10, no. 4, p. e0123923, Apr. 2015, doi: 10.1371/journal.pone.0123923.
- [53] M. W. Kusuma and S. Asrori, "The influence of perceived ease of use, perceived usefulness, and perceived risk on intention to use cryptocurrency in Indonesia," *Journal of Information Systems Engineering and Business Intelligence*, vol. 5, no. 1, pp. 24-30, Jan. 2019, doi: 10.20473/jisebi.5.1.24-30.
- [54] K. C. Lee and H. H. Chang, "Consumer attitudes toward online shopping," *Internet Research*, vol. 21, no. 4, pp. 476-491, Aug. 2011, doi: 10.1108/10662241111158369.
- [55] H. F. Lin, "Understanding the determinants of electronic supply chain management system adoption: Using the technology–organisation– environment framework," *Technological Forecasting and Social Change*, vol. 86, pp. 80-92, Sep. 2014, doi: 10.1016/j.techfore.2013.08.035.
- [56] Y. Liu and H. Li, "Understanding the factors influencing consumer willingness to use cross-border e-commerce: The role of perceived risk, perceived benefit, and trust," *Journal of Retailing and Consumer Services*, vol. 34, pp. 1-11, Sep. 2017, doi: 10.1016/j.jretconser.2016.09.006.

- [57] Y. Liu and S. Tai, "A study on the influence of electronic word-of-mouth and trust on consumers' intention to purchase online: Evidence from China," *Journal of Business Research*, vol. 69, no. 12, pp. 4595-4602, Dec. 2016, doi: 10.1016/j.jbusres.2016.03.031.
- [58] K. W. Lo, H. H. Liu, and W. H. Tseng, "An analysis of technology acceptance model using PLS-SEM," *Journal of Economics, Business, and Management*, vol. 4, no. 4, pp. 278-282, Apr. 2016, doi: 10.7763/JOEBM.2016.V4.402.
- [59] R. Macik and A. Studzińska, "Consumer trust in the context of personalisation and privacy: Exploring the moderating effects of social media usage and gender," *European Journal of Marketing*, vol. 56, no. 13, pp. 1515-1545, Nov. 2022, doi: 10.1108/EJM-06-2021-0449.
- [60] D. H. Mai and T. V. Hong, "Factors affecting the acceptance of blockchain technology by finance companies in Vietnam: An extension of the UTAUT model," *Journal of Asian Finance, Economics, and Business*, vol. 8, no. 5, pp. 1139-1149, May 2021, doi: 10.13106/jafeb.2021.vol8.no5.1139.
- [61] S. Makuvaza and J. Hou, "Understanding the factors influencing user acceptance of mobile banking in Zimbabwe: An integration of TAM and UTAUT," *Journal of Economics and International Finance*, vol. 12, no. 2, pp. 53-63, Mar. 2020, doi: 10.5897/JEIF2020.1014.
- [62] N. Barberis, "Thirty years of prospect theory in economics: A review and assessment," *National Bureau of Economic Research*, 2012. [Online]. Available: http://dx.doi.org/10.3386/w18621

- [63] H. Treiblmaier, D. Leung, A. O. J. Kwok, and A. Tham, "Cryptocurrency adoption in travel and tourism: An exploratory study of Asia Pacific travellers," *Current Issues in Tourism*, vol. 24, no. 22, pp. 3165-3181, 2021. doi: 10.1080/13683500.2020.1863928.
- [64] F. Steinmetz, M. von Meduna, L. Ante, and I. Fiedler, "Ownership, uses and perceptions of cryptocurrency: Results from a population survey," *Technological Forecasting and Social Change*, vol. 173, p. 121073, 2021. doi: 10.1016/j.techfore.2021.121073.
- [65] S. S. Gupta, S. S. Gupta, M. Mathew, and H. R. Sama, "Prioritising intentions behind investment in cryptocurrency: A fuzzy analytical framework," *Journal of Economic Studies*, 2020. doi: 10.1108/JES-06-2020-0285.
- [66] R. Sham, E. C.-X. Aw, N. Abdamia, and S. H.-W. Chuah, "Cryptocurrencies have arrived, but are we ready? Unveiling cryptocurrency adoption recipes through an SEM-fsQCA approach," *The Bottom Line*, vol. 36, no. 2, pp. 209-233, 2023. doi: 10.1108/BL-01-2022-0010.
- [67] A. Bandura and R. H. Walters, *Social Learning Theory*, vol. 1. Prentice-Hall, 1977.
- [68] A. Perdana, W. E. Lee, and A. Robb, "From enfant terrible to problemsolver? Tracing the competing discourse to explain blockchain-related technological diffusion," *Telematics and Informatics*, vol. 63, p. 101662, 2021. doi: 10.1016/j.tele.2021.101662.
- [69] R. A. Raweh, M. M. Nadzir, and H. H. Ibrahim, "Factors affecting cryptocurrency adoption intention among individuals," *Journal of Theoretical and Applied Information Technology*, vol. 102, no. 20, 2024.
- [70] L. Renninger, "Uncertainty reduction as a theory for fixation selection," *Journal of Vision*, vol. 9, no. 14, pp. 11–11, 2009. doi: 10.1167/]}9.14.11.