FACTORS AFFECTING THE ADOPTION OF CRYPTOCURRENCY

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Abstract

The study discusses the factors which play a significant role in technological adoption. Data were collected from 342 respondents with sufficient knowledge of investing in cryptocurrency to derive authentic and reliable results. We used statistical software SPSS and SmartPLS to conduct various data tests. SPSS was used to check the missing values and the normality of the data, and it was found that there was no abnormality in the data. Also, demographic analysis was done using SPSS to characterize the respondents with gender, income, occupation, and knowledge of cryptocurrency. Smart PLS software was used for further analysis involving the measurement model and the structural model. In the measurement model, we checked validity and reliability to ensure the items of every latent variable measure their corresponding latent variable when the data is valid; data were found reliable and valid for further analysis since the result of AVE was more than 0.5 in the structural model. We used path coefficients to analyze the data and test the hypotheses. None of the hypotheses were rejected, as each p-value was less than 0.05, indicating a significant impact on the model.

Keywords: Transactional Features, Performance Expectancy, Technological adoption, Technology acceptance model, Crypto Currency

Introduction

The technological change in financial and economic activities is rapidly advancing on the heels of something old. The nature and frequency of financial transactions in any economy significantly impact economic growth. We settle financial transactions with money acceptable to both buying and selling parties. Money has a long history; today's standard money is not the same as in early ages; people used other resources to exchange goods and services. For example, in the start, people used a barter system, which is the exchange of goods for another. Then, they shifted to treating

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commodities as money, metallic coins, paper money, and plastic money, and then this journey continued towards digital money or virtual money (cryptocurrency). Digital money brings a new system, such as Blockchain. As technological change is introduced, economic transactions also start adapting.

The Barter system was used when the needs of people were limited, and people used their excess goods and services to barter such resources with other goods and services they needed. The valuation was one of the significant problems in the barter system, which people faced and led to disagreement. Such problems ultimately increased the need for a new system for smooth and easy trading and other monetary activities (Pascu., 2020).

The barter system was replaced by commodity money as people were facing problems with the barter system. Commodity money is similar to a barter system because people place value on specific items. Precious metals, stones, and shells were used as commodity money for trading. The value of such a commodity is considered valid due to scarcity, usefulness or aesthetic appeal. The value of a commodity was not always the same in every market, which made trading with other regions very difficult. Such problems lead to new systems making trading easier (Rogers, 2018). In 600 BC, the first metallic money coin was issued. To prevent counterfeiting, silver and gold coins were imprinted with separate images. Coins had various values, with gold coins being more valuable than silver ones, simplifying trading. Coins were also utilized in trade with other countries. In some regions, people prefer gold over silver and vice versa, which flipped the valuation of coins.

With the advent of time and technology and considering the scarcity of resources, people introduced paper currency in China during the 7th century and then in the 13th century in Europe. Initially, banks and private institutions were responsible for issuing paper currency. Still, later on, it became the responsibility of the government to regularize and control the issuance of paper currency. It led to the evolution of credit money. This system also had problems, such as hacking of stolen cards, websites and frauds. Considering this fact, a new technological change introduced virtual/digital currencies or cryptocurrencies (Farras & Salmeron, 2018).

The revolutionary change in the currency occurred in 2009 when the cryptocurrency was introduced. The world’s first cryptocurrency, "Bitcoin", was launched by Satoshi Nakamoto in 2009, and the first transaction with cryptocurrency was done in 2010 using blockchain technology. After Bitcoin, other cryptocurrencies were launched, such as Ethereum (ETH), Litecoin (LTC), and Cardano (ADA). These virtual currencies brought revolutions and opened another investment avenue for investors. They invest in such virtual currencies and treat them as a virtual asset. The most common and high-rated virtual currency is Bitcoin. Many economies of the world are trying to adopt and regulate these virtual currencies, and many organizations now accept virtual currency for transactions. The characteristics of such virtual currencies are attractive to economies and individuals (Rogers, 2018).

Satoshi Nakamoto allegedly developed blockchain technology, which works on the peer-to-peer network and does not need any intermediary. It makes Blockchain
decentralized. (Arias-Oliva, Pelegrín-Borondo, & Matías-Clavero, 2019). Thus, making it independent of the centralized body is illegal in many countries. The alleged founder himself denies founding the cryptocurrency.

As financial transactions advanced, people now use virtual currency for their financial transactions. The most popular and significant one is cryptocurrency. The cryptocurrency was treated as digital assets, used as a medium of exchange, and built additional monetary units (Gil-Cordero, Cabrera-Sánchez, & Arrás-Cortés, 2020).

Blockchain technology will likely be the future source of business benefits and solutions. Blockchain technology allows us to record unchangeable data and be accessible to all network participants as Blockchain works on a Peer-to-Peer network. This network is based on a chain of blocks, and every block is connected to the previous one. This Blockchain Technology does not require any intermediary to complete the transaction. There are many implementations of this technology in the financial and business sectors. An organization can gain significant benefits and business solutions from Blockchain technology (Lewis, McPartland, & Ranjan, 2019). It provides public data verification through hashes, which brings high security and increases transparency and audibility. The continuous growth of Cryptocurrencies and Financial Innovation without proper regulations brings associated risks such as Black Markets, Taxation and Tax evasion, Hacking, Speculation bubbles, and high volatility, which raise concern over the viability and integration of such innovation in the monetary system. (Afzal & Asif, 2019).

Emerging technologies in the finance domain have been very attractive to investors and economies. Adaptation of new technology always brings a competitive environment. However, acceptance of technology is not always an easy process. Cryptocurrency and Blockchain technology change financial markets where investors and potential investors show a keen interest in it, and such interest and attractiveness also bring some problems. Some economies and businesses worldwide are near to accepting this cryptocurrency and blockchain technology, such as Canada, the United States, Austria, and other countries supporting cryptocurrency and Blockchain. At the same time, some countries and businesses are still in the process of evaluating it. Barriers which hinder the acceptance of such technologies, especially in economies like Pakistan, include transactional Features, regulations, volatility and liquidity of the cryptocurrency.

This study aims to identify the potential factors influencing the acceptance of Blockchain Technology and Cryptocurrency in Pakistan, setting a theoretical foundation by applying the UTAUT2 model. This study will justify the need to understand cryptocurrency and Blockchain acceptance factors by complementing conventional currency with Blockchain Technology and the potential of cryptocurrency. The findings of this study are expected to provide valuable insight into Blockchain Technology and Cryptocurrency in the financial market and economy in Pakistan perspective, which will help identify the key factors influencing the acceptance of cryptocurrency perspective.
Scope of the Study

The scope of this study is to investigate the acceptance factors of blockchain technology and cryptocurrency within Pakistan's financial and economic context. It primarily focuses on understanding how Pakistan's individuals, businesses, financial institutions, policymakers, and regulators perceive and adopt these emerging technologies. The study employs the UTAUT2 model as a theoretical framework to provide practical insights for informed decision-making. While centred on Pakistan, it acknowledges the broader implications of blockchain and cryptocurrency adoption within the global financial landscape. It also recognizes potential limitations due to the dynamic nature of the cryptocurrency market and the emerging nature of the subject matter.

Rationale of the Study

The rationale for this study stems from the need to grasp the factors influencing the acceptance of blockchain technology and cryptocurrency in Pakistan's financial landscape. Given their potential to reshape economic activities, aligning with global trends and addressing regulatory challenges is imperative. This research seeks to provide actionable insights for policymakers, businesses, and investors by understanding how these emerging technologies are perceived and utilized within the unique context of Pakistan, ultimately fostering innovation, competitiveness, and informed decision-making in the evolving financial sector.

Problem Statement

As Pakistan's financial and economic landscape undergoes rapid technological changes, particularly the introduction of blockchain technology and cryptocurrency, there is a pressing need to understand the factors influencing the acceptance of these innovations within the country. Understanding the factors that influence the acceptance of blockchain technology and cryptocurrency in Pakistan holds paramount importance due to the potentially profound effects of these innovations on financial transactions, economic growth, and Pakistan's competitive positioning within the global financial market. Given the absence of well-defined regulatory frameworks and the unique challenges posed by these nascent technologies, it becomes imperative to discern and scrutinize the precise factors that shape the readiness of Pakistan's individuals, businesses, and institutions to embrace and seamlessly integrate Blockchain and cryptocurrency into their financial operations. This study seeks to bridge this knowledge gap by applying the UTAUT2 model, delving into the multifaceted factors that bolster or impede the adoption of blockchain technology and cryptocurrency in Pakistan. The ultimate goal is to provide valuable insights that empower stakeholders with the information necessary for astute decision-making in this ever-evolving financial landscape.

Research Question

1. What factors influence the acceptance of blockchain technology and cryptocurrency within Pakistan's financial and economic environment, and how do they impact their adoption and integration within the country?
Research objectives

- This research aims to identify the factors influencing the acceptance of blockchain technology and cryptocurrency in a developing economy such as Pakistan. This study further aims to analyze the investors’ perspective application of the UTAUT 2 model and provide practical insights into Pakistan's business environment regarding the adoption of Blockchain and cryptocurrency.

Significance of the Study

This study holds profound significance as it explores the factors that shape the acceptance of blockchain technology and cryptocurrency in Pakistan. Amidst an era marked by swift economic and financial transformations, this research is a vital source of insights into the evolving landscape. It acknowledges the far-reaching implications of these technologies, not confined to Pakistan alone but to global economies. Beyond cryptocurrencies, the study acknowledges the transformative potential inherent in blockchain technology, offering secure, transparent, and efficient solutions that transcend various industries. Moreover, comprehending the factors influencing acceptance is paramount in a landscape where regulatory frameworks remain ambiguous.

Additionally, this research recognizes the competitive dynamics inherent in the financial market, where early adoption can bestow substantial advantages upon businesses and investors alike. By applying the UTAUT2 model, the study aspires to furnish pragmatic, actionable insights capable of guiding policymakers and stakeholders through the intricate process of blockchain and cryptocurrency adoption in Pakistan. In doing so, it contributes substantively to a deeper comprehension of the roles played by these technologies within the dynamic realm of financial evolution.

Conceptual Framework

The UTAUT2 model might guide future studies into the factors influencing Bitcoin acceptance in Pakistan. By examining these eight characteristics, the study can discover the factors influencing individuals’ adoption and use of cryptocurrencies in Pakistan. For example, past study has indicated that social influence plays a key role in technology adoption in Pakistan (Amin & Rehman, 2017). Additionally, favorable factors, such as the availability of safe and dependable cryptocurrency platforms, may impact adoption (Kousar et al., 2021).

This research can also give insights into the aspects affecting Bitcoin acceptance in Pakistan. For example, cultural issues such as religious views and attitudes toward money may impact cryptocurrency acceptance in Pakistan (Rehman et al., 2020). Overall, the UTAUT2 model provides a thorough theoretical foundation for comprehending the factors that drive technology uptake and use, including cryptocurrencies. Researchers can give insights that can assist organizations and politicians in boosting Bitcoin adoption in Pakistan by implementing this model in the Pakistani setting.
Hypotheses development

Transactional Features

Venkatesh, Thong, and Xu (2012) define performance expectation as an individual's perception that employing a certain technology would improve their work performance. The transactional aspects of cryptocurrency, based on blockchain technology, enable a safe and decentralized mechanism for transferring digital assets, which may improve an individual's work performance by enhancing transaction efficiency and security (Böhme et al., 2015). Recent research has also indicated that bitcoin adoption can improve work performance and productivity (Ozturk & Bora, 2021; Yusuf, Karim, & Alzahrani, 2021).

As a result, it is possible to assume that the transactional characteristic of Bitcoin will benefit an individual's performance expectation. Individuals who view cryptocurrency's transactional qualities as more efficient and secure will have higher anticipation of enhancing their job performance by utilizing the technology. This theory is consistent with prior research, which has demonstrated that people's perceptions of the utility and simplicity of the use of technology impact their willingness to accept and employ it (Alalwan et al., 2017; Venkatesh et al., 2012).

H1: Cryptocurrency Transaction feature will positively influence performance expectancy.

Government Regulation

The degree to which a person feels that an organizational and technological infrastructure exists to enable the adoption of a certain technology is referred to as facilitating conditions (Venkatesh, Thong, & Xu, 2012). In the case of Bitcoin, conducive conditions may include the legal and regulatory environment for cryptocurrency use and trading. Government regulation is important in creating a favorable climate for Bitcoin adoption because it provides legal clarity and legitimacy to cryptocurrency use (Kshetri, 2018).

According to recent research, government regulation is critical in driving cryptocurrency acceptance and use. For example, Kim et al. (2021) discovered that regulatory backing considerably affects consumers' faith in Bitcoin, a critical component in their intention to use the technology. Furthermore, Grewal, Singh, and Kaur (2021) discovered that government backing and regulatory clarity can significantly affect company adoption of cryptocurrencies.

Based on this, it is reasonable to expect that government regulation of cryptocurrencies will positively impact enabling circumstances. This study means that people who believe the government has established legal and regulatory frameworks for cryptocurrency adoption are more likely to believe that the necessary organizational and technical infrastructure will be in place to support cryptocurrency use (Guiso, Haliassos, & Jappelli, 2018). A lack of government regulation, on the other hand, may generate
confusion and inhibit the creation of a conducive climate for cryptocurrency adoption (Alalwan, Dwivedi, Rana, & Algharabat, 2017).

As a result, it is expected that establishing government regulation for cryptocurrency would favourably affect enabling conditions, and persons who see such rules as helpful may be more likely to accept and utilize Bitcoin.

H2: Cryptocurrency Government Regulation will positively influence facilitating conditions.

Volatility and Liquidity

Social influence is the degree to which an individual believes important individuals feel they should utilize a specific technology (Venkatesh, Thong, & Xu, 2012). In the case of Bitcoin, social influence may be influenced by the perceived volatility of cryptocurrency values. Cryptocurrencies, such as Bitcoin, have endured considerable price changes, which may impact how individuals perceive cryptocurrency usage and how important others see it.

Previous research has discovered that price volatility can influence people's opinions of Bitcoin and its application. For example, Zhu and Huang (2020) discovered that bitcoin price fluctuation might damage customers' faith in the system. Furthermore, Sereshi, Madani, and Asadi (2020) discovered that perceived risk, especially price fluctuation, might harm bitcoin adoption.

Based on this, it is possible to assume that cryptocurrency volatility will have a favorable impact on social influence. This study indicates that those who consider bitcoin price volatility to be more significant may also consider cryptocurrency use to be more significant, and they may be more inclined to assume that important others believe they should utilize the technology (Islam, Hossain, & Rahman, 2019). As a result, the perceived volatility of cryptocurrency prices is expected to affect social influence positively. People who view bitcoin price volatility as more significant may be more likely to embrace and utilize cryptocurrency.

Furthermore, according to the efficient market theory (Fama, 1970), asset prices represent all available information, including volatility. Volatility may be an essential feature determining bitcoin price value since it indicates market demand and interest in the asset (Cheah & Fry, 2015). As a result, bitcoin volatility may have a beneficial influence on the price value. This study indicates that if a cryptocurrency's volatility rises, its price may also rise, as investors see the asset as more valuable and in higher demand (Huang & Zhou, 2020).

H3A: Cryptocurrency volatility will impact positively on social influence.

H3B: Cryptocurrency Volatility will positively impact the price Value.
Performance Expectancy (PE)

The degree to which an individual feels that employing a specific technology would improve their work performance is called performance expectation (Venkatesh, Thong, & Xu, 2012). Based on blockchain technology, the cryptocurrency transactional feature provides a secure and decentralized system for transferring digital assets, which may improve an individual's job performance by increasing transaction efficiency and security (Böhme, Christin, Edelman, & Moore, 2015).

Previous studies have found that perceived usefulness, which includes performance expectation, influences behavioral intention to utilize technology (Davis, 1989; Venkatesh & Davis, 2000). As a result, it can be expected that performance expectations would positively influence an individual's behavioral intention to use Bitcoin. This study suggests that those who believe cryptocurrency's transactional characteristics are more efficient and safer may be more likely to utilize it for transactions (Islam, Hossain, & Rahman, 2019). However, past research on technology uptake and perceived utility supports this idea.

H4: Performance Expectancy will positively influence behavioral intention to use cryptocurrency.

Social Influence

Social influence is the degree to which a person believes that relevant people (e.g., colleagues, friends, and family) believe they should utilize a certain technology (Venkatesh et al., 2012). In the case of cryptocurrencies, social influence may come from reliable sources such as industry professionals, friends, and family who have used Bitcoin successfully. Based on this, we may infer that social impact influences an individual's behavioural intention to use Bitcoin in a good way. This study means that persons who believe Bitcoin adoption has a strong social impact are more likely to utilize the technology themselves (Zheng et al., 2018).

Several studies have been conducted to support this notion. For example, Liu and Forte (2018) revealed that social influence significantly impacted people's intentions to accept and use cryptocurrencies. Similarly, Islam et al. (2019) observed that social impact strongly predicted behavioural intention to use Bitcoin.

H5: Social influence will positively influence Behavioral Intention to use cryptocurrency.

Price Value

Price value refers to a cryptocurrency's perceived worth depending on its market price and potential for appreciation (Haddad & Hornuf, 2020). When people consider the price of a cryptocurrency to be high, they may be more inclined to utilize it owing to the possibility of financial benefit (Islam, Hossain, & Rahman, 2019).

As a result, it is reasonable to expect that price value will favour the behavioral desire to use Bitcoin. This study indicates that people who believe the price of a
cryptocurrency is high may be more likely to utilize it than people who believe the price is low (Kim & Kim, 2020).

**H₆:** Price Value will positively influence behavioral intention to use cryptocurrency.

### Facilitating conditions

The degree to which an individual feels that the required resources and assistance are accessible to utilize a certain technology is referred to as facilitating conditions (Venkatesh et al., 2012). Access to reputable cryptocurrency exchanges, user-friendly wallets, and supporting regulatory frameworks are examples of enabling conditions in the case of Bitcoin.

According to research, enabling environments greatly impact people's intentions to utilize technology (Kim & Kim, 2020). As a result, it is reasonable to expect that conducive conditions will benefit individuals' behavioral intention to utilize Bitcoin. Individuals who believe that the required resources and assistance are accessible for adopting Bitcoin are more likely to accept and use the technology (Islam et al., 2019).

**H₇:** Facilitating conditions will positively influence behavioral intention to use cryptocurrency.

### Trust

Trust is important in adopting new technology, particularly when financial transactions and sensitive information are involved (Kshetri, 2018). Trust may be characterized in cryptocurrencies and Blockchain as the conviction that the system is safe, dependable, and transparent.

Research indicates trust is a key predictor of individuals' propensity to utilize cryptocurrencies and blockchain technology (Islam et al., 2019; Wang et al., 2019). As a result, it is possible to hypothesize that trust will favorably affect people's behavioral intentions to utilize Bitcoin and Blockchain. In other words, those who believe cryptocurrencies and Blockchain are trustworthy will likely want to accept and use the technology.

Blockchain technology has gained the trust of cryptosystem users due to its safe and secure system that operates on peer-to-peer networks. Gil-Cordero et al., 2020; Cabrera-Sánchez et al., 2020; Arrás-Cortés et al., 2020). According to this theory, trust is important in persuading people to utilize cryptocurrencies and Blockchain, which can lead to higher adoption of these technologies. As a result, trust-building activities such as transaction transparency, rigorous security measures, and regulatory frameworks may aid in adopting cryptocurrency and blockchain technology. As a result of the above reasoning, the following hypothesis may be established.

**H₈:** Trust will positively influence behavioral intention to use Cryptocurrency and Blockchain.
Cryptocurrency and Blockchain Usage Behavior.

An individual's behavioral intention to utilize Bitcoin and Blockchain refers to their perceived likelihood of employing these technologies in the future. It predicts real usage behavior well (Venkatesh, Thong, & Xu, 2012). This study suggests that if people plan to use cryptocurrencies and Blockchain, they are more likely to participate in usage behavior.

Based on this, it is reasonable to expect behavioral intentions to use cryptocurrency and Blockchain to favour cryptocurrency and Blockchain usage behavior. Individuals who desire these technologies are likelier to participate in real usage behavior, such as purchasing, trading, and keeping cryptocurrencies or using Blockchain for safe and transparent transactions (Wang et al., 2019).

Furthermore, when supporting variables such as government regulation, social influence, price value, and trust are favorable, the beneficial impact of behavioral intention on usage behavior is magnified (Islam et al., 2019). In other words, when people believe that Bitcoin and Blockchain are simple to use, socially acceptable, useful, and trustworthy, their behavioral intention to utilize these technologies increases, leading to increased utilization.

**H0:** Behavioral Intention to use cryptocurrency and Blockchain positively influences cryptocurrency and Blockchain usage behavior.

**Figure 1** visualizes the hypotheses developed concerning the relation of several variables.

![Figure 1 Theoretical and Conceptual framework with hypotheses](image-url)
Methodology

This study takes a quantitative deductive approach, relying on online questionnaire surveys as the primary method of gathering data. Online surveys were chosen for their cost-effectiveness and efficiency in collecting responses from a sizable sample of 342 participants based in Pakistan. The data analysis involved employing the Smart PLS technique, a robust method suitable for structural equation modeling. This approach was instrumental in assessing the study's hypotheses, shedding light on the factors influencing cryptocurrency adoption within the Pakistani context.

A systematic measurement model was constructed using the PLS (Partial Least Squares) algorithm to ensure the study's reliability and validity. This model is a dependable tool for evaluating the consistency and accuracy of the study's constructs and measurements. Additionally, bootstrapping, a well-established resampling technique, was applied to assess the statistical significance of the established relationships within the study, thereby fortifying the overall robustness of the analytical framework.

Data was meticulously collected through a structured questionnaire featuring closed-ended questions and a five-point Likert scale. This approach enabled us to capture the opinions and attitudes of respondents comprehensively. Each latent variable examined in the study was thoughtfully represented by a minimum of four distinct items, ensuring a thorough and meticulous assessment of each construct.

Before delving into the primary analysis, a systematic pre-estimation analysis was carried out to identify and address any missing data or outliers within the dataset. This meticulous procedure was essential to uphold the integrity and reliability of the data. This rigorous and systematic methodology empowered us to conduct a comprehensive and exhaustive exploration of the factors influencing the acceptance of blockchain technology and cryptocurrency within Pakistan.

Measurement Model

In the measurement model, it is essential to assess the validity and reliability of the model. For validity, convergent validity and discriminate validity results are essential. Convergent validity reflects the convergence of items to measure the latent variable. (Urbach & Ahlemann, 2010). A convergent variable is identified when the average variance extracted (AVE) is at least 0.5. The discriminant validity measures the differentiation of one item from another item. Discriminant validity can be measured in two ways. One is cross-loading, and the other is the Fornell-Larcker criterion, in which we compare the square root of AVE with the latent variable correlation.

Results

Table 1 shows the reliability test results to check the reliability of the questionnaire. As a rule of thumb, Cronbach's Alpha value is suggested to be \( \geq 0.7 \). The table shows that all variables have an alpha value greater than 0.7 except Performance
Expectancy, which is 0.677. However, this can be approximated to 0.7; therefore, it is acceptable.

Composite reliability is another modern scale to check reliability; Table 1 also incorporates the result of composite reliability. Likewise, in Cronbach's alpha, the composite reliability value should be ≥0.7; in the above table, all variables are above 0.7. Also, the Price Value has the highest composite reliability.

Table 1: Construct Reliability and Validity

<table>
<thead>
<tr>
<th>Construct</th>
<th>Cronbach's Alpha</th>
<th>rho_A</th>
<th>Composite Reliability</th>
<th>Average Variance Extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioral Intention</td>
<td>0.731</td>
<td>0.736</td>
<td>0.832</td>
<td>0.553</td>
</tr>
<tr>
<td>Facilitating Condition</td>
<td>0.796</td>
<td>0.802</td>
<td>0.868</td>
<td>0.621</td>
</tr>
<tr>
<td>Government Regulation</td>
<td>0.761</td>
<td>0.772</td>
<td>0.864</td>
<td>0.682</td>
</tr>
<tr>
<td>Performance Expectancy</td>
<td>0.677</td>
<td>0.696</td>
<td>0.820</td>
<td>0.604</td>
</tr>
<tr>
<td>Price Value</td>
<td>0.873</td>
<td>0.884</td>
<td>0.915</td>
<td>0.730</td>
</tr>
<tr>
<td>Social Influence</td>
<td>0.792</td>
<td>0.806</td>
<td>0.880</td>
<td>0.710</td>
</tr>
<tr>
<td>Transactional Features</td>
<td>0.795</td>
<td>0.801</td>
<td>0.880</td>
<td>0.709</td>
</tr>
<tr>
<td>Trust</td>
<td>0.833</td>
<td>0.838</td>
<td>0.888</td>
<td>0.666</td>
</tr>
<tr>
<td>Usage Behavior</td>
<td>0.769</td>
<td>0.775</td>
<td>0.866</td>
<td>0.684</td>
</tr>
<tr>
<td>Volatility</td>
<td>0.805</td>
<td>0.870</td>
<td>0.884</td>
<td>0.721</td>
</tr>
</tbody>
</table>

Convergent validity shows how an item converges to measure the latent variable—convergent validity measures from Average Variance Extracted (AVE). As a rule of thumb, the value should be ≥ 0.5. In Table 1, since all variables have an AVE value greater than 0.5, the data confirms that the variable is valid and converges to measure the latent variable.
The discriminant validity can be performed using the Fornell-Larcker Criterion, Cross Loading and HTMT (Ab Hamid, Sami, & Mohmad Sidek, 2019). The Fornell-Larcker criterion suggests that the constructs in the study demonstrate discriminant validity, meaning they are distinct from each other and do not overlap excessively see Table 2 below.

<table>
<thead>
<tr>
<th></th>
<th>I</th>
<th>IC</th>
<th>R</th>
<th>E</th>
<th>PV</th>
<th>I</th>
<th>TF</th>
<th>R</th>
<th>B</th>
<th>O</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>0.744</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>FC</td>
<td>0.589</td>
<td>0.788</td>
<td></td>
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<tr>
<td>GR</td>
<td>0.529</td>
<td>0.384</td>
<td>0.826</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>PE</td>
<td>0.464</td>
<td>0.606</td>
<td>0.455</td>
<td>0.777</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>PV</td>
<td>0.560</td>
<td>0.424</td>
<td>0.381</td>
<td>0.386</td>
<td>0.854</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>SI</td>
<td>0.426</td>
<td>0.246</td>
<td>0.238</td>
<td>0.157</td>
<td>0.441</td>
<td>0.843</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TF</td>
<td>0.489</td>
<td>0.585</td>
<td>0.366</td>
<td>0.549</td>
<td>0.382</td>
<td>0.125</td>
<td>0.842</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>TR</td>
<td>0.600</td>
<td>0.534</td>
<td>0.267</td>
<td>0.374</td>
<td>0.425</td>
<td>0.340</td>
<td>0.472</td>
<td>0.816</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UB</td>
<td>0.789</td>
<td>0.507</td>
<td>0.341</td>
<td>0.403</td>
<td>0.416</td>
<td>0.324</td>
<td>0.398</td>
<td>0.463</td>
<td>0.827</td>
<td></td>
</tr>
<tr>
<td>VO</td>
<td>0.581</td>
<td>0.395</td>
<td>0.310</td>
<td>0.180</td>
<td>0.528</td>
<td>0.399</td>
<td>0.214</td>
<td>0.383</td>
<td>0.480</td>
<td>0.849</td>
</tr>
</tbody>
</table>

**Structural Model**

The structural model analyses the relationship between latent variables. The PLS structural model uses the variable's coefficient of determination (R²) and path coefficient to evaluate the model, and R² quantifies the relationship between total variance and the explained latent variables. The value of R² shows that the independent variables explain the variance of the dependent variables. Behavioral Intention R² value is 0.553, and the independent variable Transaction Feature explains 55.3% of the variance with the association of mediating variable Performance expectancy. The remaining 45.7% of the variation is unknown for this study. The facilitating condition R² value is 0.148; the independent variable, Government Regulation, explains 14.8% of the variation, and the rest, 86.2%, is unknown for this study. At the same time, the R square adjusted value is 0.546, which means that 54.6% represents that all independent variables significantly impact the dependent variables. At the same time, the R square adjusted value is 0.145 for the Facilitating condition, which means that 14.5% represents that all independent variables significantly impact the dependent variables.
Moreover, in Table 3, the data analysis is Path Coefficient, which allows the researcher to determine the relationship between independent and dependent variables using the path coefficient model. Table 3 shows a significant impact of the independent variable on the dependent variable. The P-value significance should be less than 0.05, as Table 4 shows how the P-value is less than 0.05, which accepts and contributes to the significant impact on the dependent variable. Figure 2 summarizes the findings of the structural model with necessary values.

<table>
<thead>
<tr>
<th>Path</th>
<th>Beta</th>
<th>P Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioral Intention ➔ Usage Behavior</td>
<td>0.796</td>
<td>0.000</td>
</tr>
<tr>
<td>Facilitating Condition ➔ Behavioral Intention</td>
<td>0.250</td>
<td>0.000</td>
</tr>
<tr>
<td>Government Regulation ➔ Facilitating Condition</td>
<td>0.384</td>
<td>0.000</td>
</tr>
<tr>
<td>Performance Expectancy ➔ Behavioral Intention</td>
<td>0.089</td>
<td>0.039</td>
</tr>
<tr>
<td>Price Value ➔ Behavioral Intention</td>
<td>0.231</td>
<td>0.000</td>
</tr>
<tr>
<td>Social Influence ➔ Behavioral Intention</td>
<td>0.150</td>
<td>0.003</td>
</tr>
<tr>
<td>Transactional Features ➔ Performance Expectancy</td>
<td>0.550</td>
<td>0.000</td>
</tr>
<tr>
<td>Trust ➔ Behavioral Intention</td>
<td>0.282</td>
<td>0.000</td>
</tr>
<tr>
<td>Volatility ➔ Price Value</td>
<td>0.528</td>
<td>0.000</td>
</tr>
<tr>
<td>Volatility ➔ Social Influence</td>
<td>0.399</td>
<td>0.000</td>
</tr>
</tbody>
</table>
Discussion

The study wanted to learn about the elements that influence Bitcoin adoption. The study identified the key elements influencing Bitcoin adoption using Venkatesh's theory of technology acceptance UTAUT2 and a literature review. With a beta coefficient of 0.796 and a p-value of 0.000, behavioral intention is the biggest predictor of Bitcoin adoption. This study demonstrates that the desire to use cryptocurrency greatly drives usage behavior. This conclusion is consistent with prior studies indicating that intention is important in technology adoption (Venkatesh et al., 2012). With p-values of 0.039 and 0.003, respectively, performance expectation and social influence substantially affect behavioral intention to use cryptocurrency. This research supports prior results that perceived utility and social impact are important determinants of technology adoption (Venkatesh et al., 2012; Davis, 1989). With p-values less than 0.05, facilitating circumstances, government regulation, price value, and trust all substantially influence behavioral intention to use cryptocurrency. These findings support prior research that shows that conducive circumstances and trust are essential determinants in technology adoption (Venkatesh et al., 2012; Bhattacherjee, 2001) and that government control and pricing value might impact user behavior (Kshetri, 2018).
Transactional qualities were demonstrated to significantly affect performance expectations with a p-value of 0.000, suggesting that the secure and decentralized blockchain technology system can boost the perceived utility of cryptocurrencies. This finding is consistent with previous research that shows that the characteristics of a technology influence perceived usefulness (Venkatesh et al., 2012). Volatility was found to have a significant favorable effect on price value and social influence with p-values less than 0.05. This finding is consistent with previous research, which shows that the volatility of a technology or asset may affect price and social impact (Kristoufek, 2018).

Finally, the study provides empirical evidence on the factors influencing cryptocurrency adoption. It confirms the significance of behavioral intention, performance expectancy, social influence, facilitating conditions, government regulation, price value, trust, and transactional features. The study's results can assist politicians, organizations, and people to better understand the variables that drive Bitcoin adoption and develop ways to encourage its use.

Conclusion

The central part of the population of Pakistan does not have adequate knowledge regarding cryptocurrencies. Therefore, they avoid using digital and Virtual currencies. They prefer to use hard-form money. Such behavior is reluctant to adopt such technological advancement. Pakistan is more intended toward saving than investing, and many factors come in role-play, such as income level, investment knowledge, etc. Most salaried people tend to fulfill their necessities, and their savings are meager. Therefore, a lack of knowledge or motivation exists to adapt to the new technology. Educational institutes should update their curriculum to enhance the financial literacy of youth. In contrast, the financial sector should adopt such advancements to promote and facilitate the investor by reducing the barriers and hidden charges. The government can regularize cryptocurrencies by making appropriate policies.

Based on the findings of this research, we came up with some conclusions and recommendations. With the help of factor of the theoretical model of UTAUT2, we recommend adopting new technology. It is a three-way process where individuals, organizations, and government play an important role. Individuals should build hedonic motivation and learn new technology. In contrast, an organization should provide appropriate training and facilities to support the process. At the same time, the government should make appropriate policies to regulate cryptocurrency and provide facilitation and support for the adoption process. This study will ultimately increase the system's performance and minimize the efforts. It can only be done by providing facilitating conditions, building trust and having strong behavioral intentions toward cryptocurrency usage.

Limitations of the study

This study has several limitations. Firstly, the availability of historical and current data on blockchain and cryptocurrency usage within Pakistan may be limited, potentially restricting the depth of analysis and generalizability of findings. Secondly, the
rapidly evolving nature of these technologies may challenge the study's ability to capture the latest developments and trends, potentially limiting its relevance over time. Thirdly, obtaining a representative sample of stakeholders within Pakistan's financial sector may be challenging, impacting the breadth and general applicability of results. Factors influencing technology acceptance can also vary across cultures and regions, so the study may not capture all nuances specific to Pakistan's socio-cultural context. Moreover, the absence of clear regulatory frameworks for Blockchain and cryptocurrency in Pakistan may affect the accuracy of findings as the regulatory landscape continues to evolve. Despite these limitations, the study aims to provide valuable insights into the acceptance factors of blockchain technology and cryptocurrency in Pakistan.

Recommendations

Based on the study's findings, some key policy hints emerge. Firstly, Pakistan must be aware of enhancing its citizens' financial training, mainly concerning cryptocurrencies. This may be done by involving blockchain and cryptocurrency subject matters in academic curricula and organising attention campaigns to teach human beings, particularly younger humans, about those technologies' capability blessings and risks. Second, it is vital to have specific and useful regulations. Collaborating with international partners and neighbouring countries can provide valuable insights into effective cryptocurrency regulation and adoption strategies. The government should establish a clear regulatory framework for cryptocurrencies to ensure patron safety and usual compliance. Thirdly, enhancing security features is vital to cope with issues about cryptocurrency adoption. Encouraging secure storage and transaction methods can significantly boost trust in these digital assets. Public awareness campaigns featuring real success stories and benefits can help bridge the information gap. Finally, encouraging innovation in the blockchain industry through grants, tax breaks, and helpful laws will increase economic increase and set up Pakistan as a tremendous participant in the similar development of blockchain technology.

Research Implications

Adoption of new technology is critical for economic progress and prosperity. Cryptocurrency is one such technology that can potentially transform the financial world. However, bitcoin acceptance in Pakistan is still early, and various variables can influence its adoption. Trust is a crucial factor influencing Bitcoin acceptance in Pakistan. Lack of faith in technology and worries about security might hinder adoption (Islam, Hossain, & Rahman, 2019). Security issues must be addressed to ensure universal acceptance of technology, such as Bitcoin, and public knowledge of its benefits must be raised. Many Pakistanis may be unaware of the potential benefits of this technology, emphasizing the importance of enhanced knowledge on the issue. This gap may be bridged by empowering individuals with information through seminars, lectures, and awareness campaigns.

Furthermore, the government's cooperation is critical in promoting Bitcoin acceptability in Pakistan. Overcoming obstacles like a lack of infrastructure and regulations necessitates proactive steps. The government may encourage and assist the adoption of cryptocurrencies in our nation by taking decisive moves to offer appropriate
support and laws. By working together through education and government assistance, we can establish a human-centred approach to embracing technology's potential for positive societal change.

References


Factors affecting the adoption of Cryptocurrency


