

Analysis of Factors Affecting Consumer Trust in Cryptocurrency Wallets and Exchanges

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Abstract. *Background:* Despite the financial technology (Fintech) industry being marked as a strategic development direction in many countries, cryptocurrency products show low adoption rates. *Purpose:* This study investigated factors affecting consumer trust in cryptocurrency products, particularly exchanges and crypto wallets. *Methods:* A three-stage multi-method approach was adopted: two non-probability convenience surveys and a systematic literature review. The initial survey (N=45) was followed by literature review (N=16) and a follow-up survey (N=95). Qualitative and quantitative analysis techniques were used. *Findings:* Trust must be understood as a versatile concept, with consumers perceiving different factors differently when choosing cryptocurrency products. Two key findings emerged: convenience, rather than trust, is the biggest factor attributed to cryptocurrency product popularity and adoption. Second, an inverse relationship exists between trustworthiness and popularity of information sources about cryptocurrency products, with less popular sources being more trusted. Consumers rely on convenience-based attributes like the ease of use and accessibility, which indirectly influence trust perception. *Conclusions:* Trust degree is not bound to specific products or services but depends on consumer intentions and knowledge, among other factors. *Research implications:* The authors suggest policy and innovation development directions to increase consumer trust in cryptocurrency products.

Keywords: cryptocurrency, crypto wallet, crypto exchange, consumer trust, consumer preferences, consumer knowledge.

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Vartotojų pasitikėjimą kriptovaliutų piniginėmis ir biržomis lemiančių veiksnių analizė

Santrauka. *Pagrindimas:* Nepaisant to, kad finansų technologijų (*Fintech*) sektorius daugelyje šalių yra pripažintas strategine plėtros kryptimi, kriptovaliutų produktų diegimo lygis išlieka žemas. *Tikslas:* Šiuo tyrimu siekta ištirti veiksnius, darančius poveikį vartotojų pasitikėjimui kriptovaliutų produktais, ypač biržomis ir kriptovaliutų piniginėmis. *Metodai:* Taikytas trijų etapų mišriųjų metodų tyrimo modelis: du netikimybiniai patogumo imčių apklausos tyrimai ir sisteminė literatūros apžvalga. Po pirminio tyrimo ($N = 45$) atlikta literatūros apžvalga ($N = 16$) ir pakartotinis tyrimas ($N = 95$). Naudoti kokybinio ir kiekybinio tyrimo metodai. *Rezultatai:* Pasitikėjimo samprata turi būti suprantama kaip daugiareikšmė koncepcija, vartotojai skirtingai suvokia įvairius veiksnius, darančius poveikį jų kriptovaliutų produktų pasirinkimui. Nustatyti du pagrindiniai rezultatai: patogumo, o ne pasitikėjimo veiksnys yra svarbiausias kriptovaliutų produktų populiarumui ir diegimui. Antra, egzistuoja atvirkštinis ryšys tarp informacijos šaltinių apie kriptovaliutų produktus patikimumo ir populiarumo – mažiau populiarūs šaltiniai paprastai yra patikimesni. Vartotojai remiasi patogumo kriterijais, tokiais kaip naudojimo paprastumas ir prieinamumas, kurie netiesiogiai daro poveikį pasitikėjimo suvokimui. *Išvados:* Pasitikėjimo lygis nėra susijęs su konkrečiais produktais ar paslaugomis, bet priklauso nuo vartotojų ketinimų ir žinių bei kitų veiksnių. *Tyrimo praktinės reikšmės:* Autoriai siūlo politikos formavimo ir inovacijų plėtros kryptis, skirtas didinti vartotojų pasitikėjimą kriptovaliutų produktais.

Pagrindiniai žodžiai: kriptovaliutos; kriptovaliutų piniginė; kriptovaliutų birža; vartotojų pasitikėjimas; vartotojų preferencijos; vartotojų žinios.

1 Introduction

In the recent years, the popularity of cryptocurrencies has grown significantly in both individual and business uses. However, mass adoption of these technologies has not happened yet, and cryptocurrencies are seen as an alternative investment method (Grand View Research, 2021). Trust in novel financial means and services has traditionally been a key factor determining the financial service or product adoption (Sutisna et al., 2023; Fomin et al., 2003), and recent studies confirm that the trust factor directly correlates with the adoption of cryptocurrency products, too (Al Reshaid et al., 2024; Gil-Cordero et al., 2024; Gómez-Hurtado et al., 2024; Hidegföldi et al., 2025; Kala and Chaubey, 2023; Kraiwanit et al., 2024; M. H. ur Rehman et al., 2020).

There are two main methods for storing cryptocurrencies: cryptocurrency exchanges and cryptocurrency wallets. There are two types of exchanges: centralized and decentralized, with the former being more popular (Chohan, 2018). There are also different types of wallets, of which, some are considered to be more secure, like hardware wallets, and some are deemed less secure, like software wallets.

The similarities between exchanges and wallets are to be found in how they allow to interact with the cryptocurrency ecosystem – storing, receiving, and sending cryptocurrency. Differences are manifested in the point that wallets allow users to hold their own private keys whereas crypto exchanges allow to buy crypto directly. Another big difference between the crypto tools is that exchanges will usually require to verify the user identity, but wallets can be used anonymously. This means that storing crypto on a wallet compared to exchange is safer if looked from the possibility of controlling one's funds, and thus should bring more trust in users.

It is estimated that there were some 84 million cryptocurrency wallet users worldwide as of August 2022 (Grand View Research, 2021). This is a steep increase from fewer than

10 million in 2016 – with each year, cryptocurrency wallet user count was gaining at least 10 million new users (Albayati et al., 2021; Wątopek et al., 2021). Yet, with almost 100 thousand users, the most popular cryptocurrency exchange (CCE or DCE) mobile app *Coinbase* alone has more users than the whole cryptocurrency wallet user base, with half a dozen other CCEs scoring from one to over 20 million users each (Curry, 2024), thus making the CCEs adoption rate at least double of crypto wallets.

Looking from the perspective of amounts stored on the exchanges, it shows that only around 11% of Bitcoin and 19% of Ethereum is stored in exchanges (de Best, 2024). These two cryptocurrencies make the most of all cryptocurrency market capitalization at around 56% (de Best, 2024). With the assumption that the percental distribution across other cryptocurrencies is similar, most of cryptocurrency is stored off exchanges in wallets. Those are investment companies and business that have accumulated large financial sums, which make deposit funds in crypto wallets (Scott, 2022). The difference between the user count of crypto wallets and exchanges tells us that private citizens store their currency on exchanges. This statistic means that the large population of citizens who altogether hold around 20% of all cryptocurrency market capitalization are subjected to many risks. For example, unlike the traditional exchanges, CCEs do not legally insure private investments (Zuckerman, 2021). If a private account is compromised by hackings or scams, or in case of CCE bankruptcy (Reuters.com, 2023), customers will lose its cryptocurrency holdings (Chohan, 2018). While this paradoxical situation can be attributed to several reasons, including advertisement, or ease of access and trust, the factors which make people prefer cryptocurrency exchanges over wallets are not obvious.

The goal of this study was to investigate the factors affecting consumers' trust in cryptocurrency products in general, and the factors affecting their trust in exchanges and crypto wallets in particular. The problem of this study is relevant because the development of the financial technology (Fintech) industry in a number of countries has been marked as one of the strategic directions of development, while at the same time laws in some (or the same) countries forbid trading crypto assets. The non-uniform regulatory landscape and often insufficient or controversial information about cryptocurrencies in the popular media affects the consumer confidence, which in turn can affect the country's capital and cryptocurrency product companies, individual users, and larger financial institutions in their global operations. At the same time, little research has so far been done on the perceptions and attitudes of people towards cryptocurrency products and services, unlike its technological and business aspects such as security and privacy (He et al., 2020; Navamani, 2023), legal status and taxation (Saleh et al., 2020).

The currency and novelty of this research is established by the fact that cryptocurrency remains a new financial instrument that can be used to pay for goods or services or as an investment, while the adoption of cryptocurrency products and knowledge about this financial instrument among the general population remain low. The findings of this research will strengthen consumers' and fintech companies' trust in cryptocurrency products and services, and can be used by the fintech industry and government policy makers to develop awareness campaigns aimed at increasing consumer confidence and reducing

fraud. These determinants of adoption in the context of specific cryptocurrency products are largely overlooked in prior studies, which predominantly emphasize technological, regulatory, or market aspects (Sagheer et al., 2022).

2 Prior Studies on Trust in Crypto Technologies and Services

There are many studies on the trust of consumers in new financial technologies and services (Chandra et al., 2010; He et al., 2020; Kautonen and Karjaluoto, 2008; Xiong, 2013) and other online services or products (Kairys et al., 2023; Kumar et al., 2024; Laužikas et al., 2022). Their general conclusion is that trust comes from the technological system, and also that trust is placed in vendors. In the particular case of crypto finances, its short history has proved that the ecosystem of products and services is dynamic and unpredictable, as established by the lack of policies, accessible information, or good customer service. Besides, many individuals associate the cryptocurrency sector with scams (Chohan, 2018), which can be easily explained through the presence of media articles about recent hackings or by citizens' own experience. For instance, from January 2021 through June 2022, nearly 50,000 people reported losing over \$1 billion in crypto to various scams (Johnson, 2024).

To examine the factors influencing consumer trust in cryptocurrency products and services (CCPS), researchers draw on several foundational theories from fields like psychology, technology adoption, and behavioral economics. The key theoretical frameworks include: the *Technology Acceptance Model* (TAM) analyzing the factors influencing a user's decision to adopt new technologies (Davis, 1989) and how, in our scenario, the usefulness of crypto as a solution to specific financial needs is manifested (Xiong, 2013); the *Institutional Trust Theory*: This framework explores the role of institutional factors – such as regulations and policies – in building consumer trust (McKnight et al., 1998) while the crypto's decentralized and often unregulated nature challenges the traditional trust paradigms (Arli et al., 2020); the *Social Trust Theory*: This perspective underlines the role of social factors – such as community opinions, and public perception – in trust formation (Putnam, 1993) that plays a crucial role in a community-driven crypto project with decentralized governance (Zuckerman, 2021).

In many cases, low trust in cryptocurrency products and services (CCPS) can be attributed to cryptocurrency exchanges mainly in three ways: thefts, shutdowns, and hacks (Arli et al., 2020). Knowing that these exchanges allocate massive amounts of funds, while not being as well-regulated as the traditional investment options, digital currency exchanges become the prime target of many attacks (Xia et al., 2020). This lack of regulation also contributes to the perception of crypto risks. However, this vulnerability is not exclusive to exchanges. While other ways of interacting with the crypto, such as wallets, can offer more secure storage options, the possibility of financial loss on exchanges remains high, even with safety measures being put in place (Albayati et al., 2021). Consumer trust in cryptocurrency is often influenced by how well the technology addresses specific user needs. Trust in technology can be established if it is perceived as valuable and as a solution to a consumer's specific problem (Xiong, 2013).

It could be argued that cryptocurrency exchanges and wallets are for two completely different use cases, and that most people who are using only cryptocurrency exchanges are merely trading for short-term while looking for high growth. However, recent survey (Reinicke, 2021) revealed that only around 30% of new cryptocurrency investors look for quick opportunity – and this observation has been further supported by the fact that only around 30% of respondents are trading cryptocurrencies weekly, and even less than 20% do it daily (Reinicke, 2021). Analysis of the popularity of and reasons for using cryptocurrency products brings to realization that while crypto wallets are more suitable for storing cryptocurrencies, and keeping digital currency savings on CCE is risky due to the lack of investment protection regulation and huge volatility that the cryptocurrency markets experience (Xia et al., 2020), most individuals choose crypto exchanges over wallets, especially those who are new to cryptocurrencies (Zuckerman, 2021). Thus, there may be other factors than trust which affect consumer choices associated with storing their crypto assets.

3 Research Design and Methodology

The study was motivated by the observed paradox (Baird, 2021) of low adoption of cryptocurrency wallets despite potentially better security and fit of this technology for individual consumers. Thus, the aim of the study was to find out if lack of trust in cryptocurrency wallets could explain the slower adoption compared to *CryptoCurrency Exchanges* (CCEs).

The study employed a three-stage design, where each research cycle was informing the following cycle. The initial observation of the paradox motivated the researchers to conduct the first survey on consumers' perceptions regarding crypto wallets and exchanges. The inconclusive results of the first survey motivated the researchers to conduct a literature review with the objective to identify factors which were previously reported to have a positive or negative effect on consumer trust in cryptocurrency products. The literature review revealed a broad scope of factors perceived by consumers as having effect on their perception about cryptocurrency products and services. Yet, some of the factors were perceived as having an opposite effect in different studies. The observed controversy motivated the researchers to corroborate the literature review findings through the additional survey round. The final stage deployed a correlation analysis and qualitative analysis of the findings, including the juxtaposition of and reflection (Weick, 1989) on commonalities and differences in the findings of the three research stages.

3.1 Sampling

The initial survey adopted the non-probability voluntary convenience sampling technique. The survey was shared electronically among students at the University of Latvia, and it collected 45 responses. The survey sought to collect answers from users of crypto products by asking specific questions on the respondent's use of crypto tools like wallets and exchanges.

The rationale for adopting convenience sampling was primarily due to the exploratory nature of the study and the difficulty in accessing a representative sample of cryptocurrency users, given the niche market segment and the lack of centralized user databases. The convenience sampling approach enabled the study to gather initial insights quickly and cost-effectively while leveraging the accessibility of university students who are likely to be early adopters of the technology. As limitations, convenience sampling can introduce selection bias, and the sample may fail to fully represent the broader population of cryptocurrency users in terms of demographics or behavior.

The literature review deployed a search on three popular databases for technical and business studies: EBSCO, Emerald, and IEEE. The following keyword combinations were used to search 'Full Text' and 'Metadata' database records: "consumer trust in crypto", "consumer trust" AND "crypto currency" AND "crypto wallet", "consumer trust" AND "cryptocurrency" OR "crypto wallet". In total, 16 papers were found to correspond to the aims of the research (see Table 1 for the summary).

The questionnaire for the second survey was carefully designed based on the matrix of factors derived from the literature review. The online survey was advertised to students primarily in Lithuania and Latvia, but not excluding participation of respondents from other countries, including the US. The survey provided 95 valid responses.

The participants of both surveys were predominantly university students aged 20–29, with a roughly equal gender split.

The risk of bias in convenience sampling was mitigated by several measures. Specifically, we introduced a snowball sampling element in both survey rounds to encourage participants to refer others. The three-stage research design allowed us to deploy iterative refinement of results through cross-validation of findings across multiple data sources.

3.2 Measurement

The measurement of factors influencing cryptocurrency adoption and trust was conducted by using insights from both the surveys and literature review. This dual approach ensured the systematic quantification of relevant variables and facilitated a robust evaluation of the identified factors. Correlation analysis was performed on the responses of 51 respondents of the second survey who reported having minimal or sufficient knowledge on cryptocurrencies. The respondents were asked to provide their opinion on each of the 15 factors obtained from the literature review as having positive, negative, or no effect on people's willingness to buy or invest in cryptocurrencies. The following key variables related to cryptocurrency adoption were utilized:

- **Ownership and Usage Patterns:** Questions assessed the participants' cryptocurrency ownership, storage preferences (e.g., use of wallets or exchanges), and the frequency of transactions.
- **Trust in Technology and Platforms:** The participants were asked to evaluate their trust in various elements of the cryptocurrency ecosystem, including the security of wallets and exchanges and the reliability of the blockchain technology.

- **Information Source Reliability:** The participants rated the trustworthiness of different information sources, such as the social media, official exchange platforms, and personal networks.
- **Motivational Drivers and Barriers:** The survey explored factors that encourage adoption, such as financial opportunities, as well as barriers, including technological complexity and perceived risk.

To ensure consistency, a mix of Likert scale questions, multiple-choice questions, and open-ended responses was used. The Likert scales quantified the strength of opinions, while open-ended responses captured more personalized perspectives.

The literature review provided a structured basis for defining and measuring the variables examined in the surveys. By analyzing previous research, the following key constructs were operationalized into measurable dimensions:

- Trust was assessed through factors like reliance on exchanges, perceived credibility of the blockchain technology, and trust in third-party wallets.
- Adoption Influencers were categorized into enablers (e.g., ease of access, financial opportunities) and deterrents (e.g., security concerns, lack of awareness).

The measurement framework derived from the literature review was directly applied to interpret survey responses. This way, the survey findings on trust in exchanges were compared to themes in the literature regarding exchange-related vulnerabilities. Similarly, motivational drivers identified in the survey were contextualized with studies highlighting behavioral and technological adoption models. Through this measurement approach, the study effectively quantified and contextualized the factors influencing cryptocurrency adoption, while ensuring that the findings were both reliable and grounded in existing academic discourse.

Additionally, statistical analysis of the responses involved calculating Pearson correlation coefficients to evaluate the strength and direction of the relationship between the variables. 12 data points were found within the range of correlation values between 0.4 and 0.69.

3.3 Data collection

The initial survey collected 45 responses. 28 of the total 45 respondents answered ‘Yes’ to the question “Do you own any cryptocurrencies?”. If the participant reported to be a user of crypto exchange, there was a follow-up question about how they rate the exchanges (that they use) features based on their needs. Similarly, there were follow-up questions regarding the point whether the participant uses only crypto wallet(s) or both wallets and exchanges. All participants regardless of their crypto use had to answer general questions about crypto, such as: “How familiar are you with different definitions?”; “How would you describe the crypto?” and “How do you rate the information you get about the crypto?”

The questionnaire for the second survey was carefully designed based on the matrix of factors derived from the literature review. The online survey following the literature review provided 95 valid responses, of which, 51 respondents reported having minimal

or sufficient knowledge on cryptocurrencies. Those survey participants who answered having at least partial or sufficient knowledge on cryptocurrency were given the matrix of factors obtained from the literature review and asked to provide their opinion on each of these factors as having positive, negative, or no effect on people's willingness to buy or invest in cryptocurrency.

3.4 Data analysis

Comparative quantitative analysis was performed on the data collected from the initial survey and the follow-up survey. For the follow-up survey data, additionally, a correlation analysis was performed. Analysis of the papers selected through the literature review provided more than 30 factors which were reported as having effect on the adoption decisions and trust in cryptocurrency products. Through aggregation of similar ones and exclusion of irrelevant or redundant factors, this initial list of factors was reduced to 15.

Table 1. Summary of literature review

No	Source / Title	Research methodology	Findings
1	Factors affecting the adoption of cryptocurrencies for financial transactions (El Chaa-rani et al., 2023)	The SEM model and the boots-trapping method on a sample of 417 French participants involved in tourism and hospitality industries to reveal the causal pathway between a set of independent factors and the willingness to adopt cryptocurrencies for financial transactions.	The empirical findings reveal that the ease of use, perceived usefulness, social influence, and financial literacy increase the willingness to use cryptocurrencies. The study also highlights that social influence and financial literacy reduce the level of perceived financial risk, and thus leads to an increase of the strength of intention to adopt the new type of decentralized currencies.
2	Do consumers really trust cryptocurrencies? (Arli et al., 2020)	451 MTurk workers, a convenience sample incentivized with a small monetary payment, participated in a cross-sectional online study with cryptocurrencies serving as the focal product category.	Support was obtained for the hypothesized notion that knowledge of cryptocurrencies, trust in government, and the speed of transactions are the main factors contributing to consumers' trust in cryptocurrencies.
3	Effect of risk attitude on cryptocurrency adoption for compensation and spending (Sridharan et al., 2023)	The study used data collected from an anonymous survey of 225 undergraduate and graduate students to measure their risk attitude. After controlling for a variety of personal traits, the study used logistic regression to identify the predicted probabilities and marginal effects on the individual choice of adopting Bitcoin.	The study found that individuals with a higher risk-seeking attitude are more likely to accept Bitcoin as payment for goods and as part of their compensation. Higher-income groups are also more likely to adopt Bitcoin than lower and middle-income individuals. While there was no significant gender difference in adoption, respondents aged 26–29 were more likely to adopt Bitcoin.

No	Source / Title	Research methodology	Findings
4	Behavior or culture? Investigating the use of cryptocurrencies for electronic commerce across the USA and China (Cristofaro et al., 2022)	A survey was administered with 2,532 cryptocurrency users across the USA and China, collecting data on their behavioral predispositions and cultural features. The results were analyzed through structured equation modeling.	The results indicate that the attitude, subjective norms, perceived behavioral control, and herding behavior positively influence the intention to use cryptocurrencies for e-commerce, while the financial literacy has no impact. Cultural dimensions amplified or reduced these relationships, with a positive effect in the USA and a negative effect in China, particularly regarding illegal attitudes and perceived risk.
5	Financial literacy or investment experience: which is more influential in cryptocurrency investment? (Zhao and Zhang, 2021)	By using a sample of US individual investors from the 2018 National Financial Capability Study Investor Survey, a three-step hierarchical logistic regression was conducted following a model-comparison approach. In addition, mediation analysis was conducted using the <i>Karlson HolmBreen</i> (KHB) method to further explore the mediating effect of the investment experience between financial literacy and cryptocurrency investment.	This study found that while both financial literacy and investment experience were positively associated with investing in cryptocurrencies, investment experience was more influential in cryptocurrency investment. The findings also demonstrated that investment experience, along with especially risky asset holding, had a significant mediating effect between subjective financial knowledge and cryptocurrency investment behavior.
6	Cryptocurrency adoption and continuance intention among Indians: moderating role of perceived government control (Kala and Chaubey, 2023)	This study examined the items of cryptocurrency adoption, continuance intention and PGC adopted from the information systems and cryptocurrency literature. The survey was administered with 391 Indians through an online questionnaire. Partial least squares structural equation modeling was used to analyze the data.	The obtained results showed that social influence, effort expectancy and perceived trust are the major drivers for cryptocurrency adoption. All paths leading to cryptocurrency adoption were found to be significant in the hypothesized directions. The study also found that PGC moderates the relationship between adoption and continuance intention.
7	Cryptocurrency adoption: a systematic literature review and bibliometric analysis (Sousa et al., 2022)	The <i>Web of Science</i> database was selected, and the analyses performed allowed us to identify five research trends obtained from the bibliographic coupling analysis.	The findings uncovered the intellectual structure in the field of cryptocurrencies and consumers' trust and offered insights on the pros and cons of consumers' willingness to trust the digital currency.
8	Disruptive innovation of cryptocurrencies in consumer acceptance and trust (Mendoza-Tello et al., 2019)	A questionnaire used to collect responses from 186 individuals. A model was designed based on two constructs from the <i>Technology Acceptance Model</i> (TAM): trust and perceived risk. To ensure the validity and reliability of our results, the model was validated by using the <i>Partial Least Squares</i> (PLS) technique.	The results confirmed the hypothesis that the ease of use, trust and perceived risk are not strong predictors of the intention to use cryptocurrencies, and that the strength of their effects is determined by the perceived utility.

No	Source / Title	Research methodology	Findings
9	Global drivers of cryptocurrency infrastructure adoption (Saiedi et al., 2021)	A panel-data structured database of countries and years for adoption of non-hidden Bitcoin nodes and Bitcoin merchants was developed. The database covered entries from 2014 to 2018, the period for which the full Bitcoin node and merchant data are available.	The paper suggests that cryptocurrency adoption is partly driven by perceived failures in the traditional finance, with the Bitcoin infrastructure spreading in regions with low trust in banks and inflation crises. Conversely, support for Bitcoin is also higher in areas with strong banking services. Additionally, the findings indicate that Bitcoin adoption is partly fueled by its utility in illicit trade.
10	The attitude of academic staff towards bitcoin (Karabulut and Sari, 2022)	Frequency analysis and the chi-square test method were used by using the <i>SPSS 26.0</i> software package. The data were obtained from an online survey of 294 members of academic staff.	The results of the study explored the factors which increase confidence in Bitcoin.
11	The role of interpersonal trust in cryptocurrency adoption (Jalan et al., 2023)	Quantification was performed of the effect of interpersonal trust on the interest in and adoption of the three largest cryptocurrencies by market capitalization – Bitcoin, Ethereum and Litecoin – by using data from the 7 th wave of the World Values Survey, Twitter, and Google Trends. WVS wave 7 open survey from 48 countries (covering the years 2017–2020) was performed. The sample size was 70867.	The findings confirm the hypothesis that trust plays an important role in promoting innovation when formal institutions are lacking in terms of this aspect. Interpersonal trust is found to be of importance.
12	A comparative study of Romanian students' perceptions on cryptocurrencies before and after the 2022 cryptocurrency market cap collapse (Mațcu et al., 2022)	A comparative qualitative approach, along with semi-structured interviews with 79 individuals to obtain associations which students make when thinking about cryptocurrencies was adopted, but also other information was collected like how reliable, trustworthy and secure they perceive cryptocurrencies to be, what is their willingness to invest in such digital assets, and how they get information about this topic.	The findings show that cryptocurrencies were associated with more negative words in the second wave of the study, but, surprisingly, the willingness to invest in such assets did not change that much. However, the willingness to invest seemed to be influenced by how secure/trustworthy the respondents perceived cryptocurrencies to be.
13	Exploring the factors affecting the adoption of blockchain technology in the supply chain and logistic industry (Mthimkhulu and Jokonya, 2022)	The study conducted a content analysis of 50 peer-reviewed articles published between 2013 and 2021 on the factors affecting the adoption of the blockchain technology in the supply chain and logistics. The article used a quantitative study to explore	The study revealed that Asia, Europe, and America contributed more research on factors affecting the adoption of the blockchain technology between 2013 and 2021. In addition, the results suggest that technical factors (security, complexity, and cost), organisational

No	Source / Title	Research methodology	Findings
		factors affecting blockchain adoption by using the <i>Technology-Organisational-Environmental</i> (TOE) framework as the theoretical lens.	factors (management support), and environmental factors (competition, IT policy and regulations, and support) affect the adoption of the blockchain technology in the supply chain and the logistics industry.
14	Research on consumer opinions on the use of cryptocurrency in online shopping (Avci et al., 2023)	An online survey of 391 consumers was conducted. It examined the effects of the ease of use, risk, and trust factors that consumers perceive about cryptocurrencies on their perceived benefit and their intention to use cryptocurrency in online shopping.	It was concluded that the perceived risk factor does not affect the intention to use cryptocurrency in online shopping.
15	Students' perception regarding cryptocurrencies (Morosan et al., 2023)	A qualitative study based on data from 25 structured interviews with students was performed. The analysis aimed to explain how students relate to cryptocurrencies, after going through all the subjects in the curriculum of their economic specialization.	The study tested the results of earlier studies, which found that women are less likely to use cryptocurrencies. This study examined how female students in economics positioned themselves on cryptocurrencies.
16	Trust in the Blockchain cryptocurrency ecosystem (M. H. ur Rehman et al., 2020)	A general domain review study was conducted which combined a standard literature review comprising 56 sources with domain requirements elicitation in order to identify the domain trust requirements.	This article revealed that a significant effort is required to develop a fully trustworthy cryptocurrency ecosystem.

4 Findings

4.1 Findings of the initial survey

62% of the respondents reported that they owned cryptocurrencies. They were asked to answer questions that are specific to the use case of storing cryptocurrencies. In most cases (75%), the owners of cryptocurrency chose crypto exchanges for storing their assets, while the remaining 25% store them only in crypto wallets or both in wallets and exchanges (Figure 1). This finding is consistent with earlier survey results (Reinicke, 2021), which showed that crypto exchanges are much more popular than crypto wallets.

The responses revealed three most common reasons for owning cryptocurrencies: potential long-term growth, potential short-term growth, and an easy way to invest. Here we found differences compared to the previous survey results (Reinicke, 2021). 71% of our survey's respondents reasoned their investment in the potential for long-term growth (Figure 2), which is four times higher than the previously reported share of 18%. One possible explanation for this change is that trust in cryptocurrencies has grown since 2021, when the CNBC survey was conducted (Reinicke, 2021).

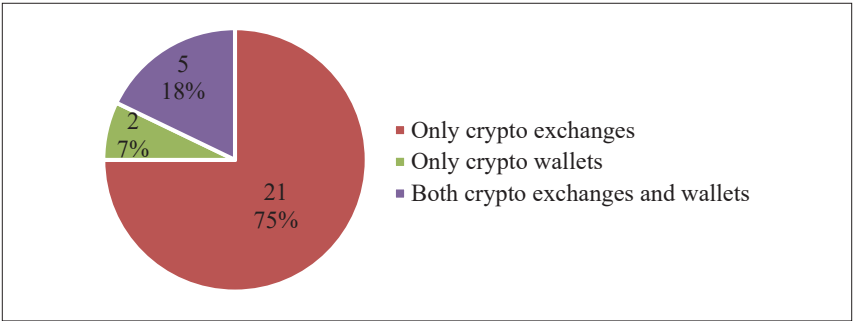


Figure 1. Cryptocurrency storage choices

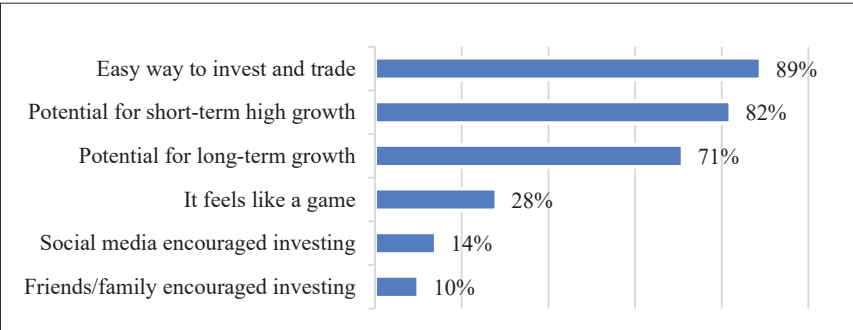


Figure 2. Motivation or reason to buy or own cryptocurrency

Figure 3 presents the differences in reasons for choosing crypto wallets or exchanges for storing the digital assets. The responses of those respondents who use both products are combined because the answers were similar, and there were only 2 respondents reporting to use wallets only.

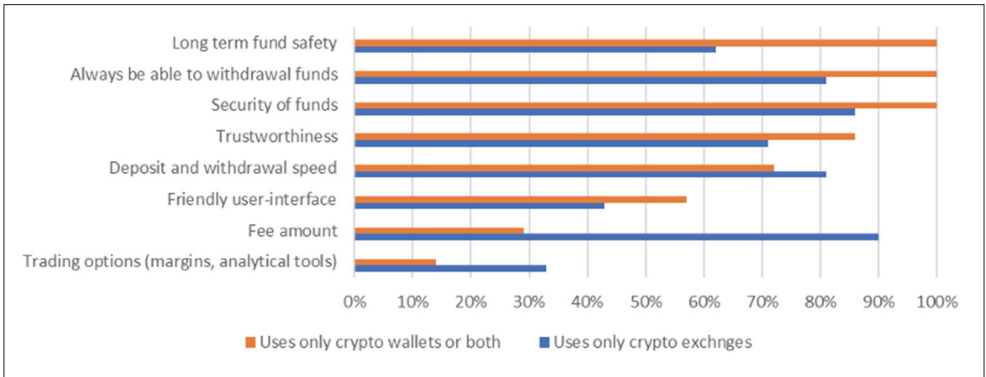


Figure 3. Important factors for choosing a place to store crypto

For those survey respondents who use only crypto exchanges, there is a different set of the most important factors to choose this particular technology as compared to those respondents who use both an exchange and a wallet. For the ‘exchange only’ respondents, the most important factors are the fee amount, the security of funds, and the ability to always withdraw. For those respondents who use both technologies, the most important factors are the long-term fund safety, the ability to withdraw funds and the security of funds. Both groups of users, however, agree that the least important factor is the trading options. The biggest difference between the two groups is found in the importance of the fee amounts: 90% of users who use exchanges vs. 30% of users of both wallets and exchanges consider the service fees to be decisive in choosing between the two options for storing their crypto assets.

What can be considered as unexpected, if not paradoxical, is the finding that the highest importance considerations of the respondents who use only crypto exchange actually represent the features of crypto wallets: the security of funds and the ability to always withdraw funds. In other words, even though a crypto wallet could better satisfy the needs of the respondents, they still chose to use an exchange.

Reflecting on this observation, we made an assumption that such preferences of the users of crypto exchanges indicate their unfamiliarity with crypto wallets in general. However, the survey responses refute this assumption: 19 out of 21 (90%) respondents who reported to use only crypto exchanges indicated knowing what a crypto wallet is. One possible explanation of this particular result can be that higher fees for the use of crypto wallets are deterring potential users, given the reported high importance of the fee factor. It has also been previously noted (Bucko et al., 2015) that crypto exchanges invest heavily to advertise that the fees on their platforms are small, whereas information about the fees for the use of crypto wallets is limited. Another possible explanation can be that the knowledge of the respondents on crypto wallets is partial or incorrect.

Knowledge of the features and advantages of novel digital products and services is a key factor determining their popularity (Fomin et al., 2005). The counter-intuitive nature of the collected responses suggests that the sources from which consumers draw information on crypto products must be examined. The survey responses indicate minor differences in media preferences between those who do not own cryptocurrencies at all and those who do own them. In general, people get their information about the crypto from social media (influencers), magazine articles (blogs, video essays) and friends as well as family. The less popular sources of information about the crypto in this case are textbooks, scientific literature, and experts.

When asked to what extent the respondents trust these sources, the most popular sources appear to be the least trusted: magazine articles and social media influencers. The most trusted are among the least popular: expert opinions, textbooks, and scientific literature. This peculiar correlation between the popularity and trust of information sources is observed in the case of the groups which use only exchanges, and which use both exchanges and wallets.

The survey also revealed a possible source of confusion on whether or not cryptocurrency products can be trusted. Interestingly, the most negative and most positive images of crypto are presented, once again, by two most popular sources of information: the most negative image is attributed to magazine articles (blogs) and expert opinions, whereas the most positive image relates to social media (influencers), friends and family.

4.2 Findings of the literature review

Our literature review resulted in the identification of 33 factors which were reported as having effect on the adoption decisions and trust in cryptocurrency products. The initial list of factors was reduced to 15 through aggregation of similar ones and exclusion of irrelevant or redundant factors (Table 2). It was also verified that the excluded factors as reported in the surveyed literature did not have ambiguous or contradicting effects (i.e., positive and negative effects at the same time).

Some factors were reported as having only positive, only negative, or mixed effects on the adoption decision (Table 3). The group of factors reported as having only positive influence is the largest (47%), followed by the group of factors with ‘mixed effects’ (40%). In the latter group, the aggregate factor “societal perception of cryptocurrency’s track record of safety and perceived risk” received the greatest diversity of the reported effects. Yet, this is one of the factors where the trust concept is embedded in all underlying (original) factors: trust in cryptocurrency, perceived risk, interpersonal trust, and awareness of information privacy.

Table 2. Aggregation of factors affecting consumers’ decision to adopt cryptocurrency products

The original factors	Aggregated or excluded factors	Reported number of times as a factor which increases (+), decreases (-), or has no influence (x) on the adoption decision		
		(+)	(-)	(x)
(1) ease of use	(1) cryptocurrency usefulness/utility	2	0	1
(2) usefulness/utility		3	0	0
(3) social influence	(2) social influence from relatives and peers	4	0	1
(4) financial literacy	(3) financial literacy	2	0	1
(6) trust in government	(4) trust in government	1	0	0
(21) financial crisis		1	0	0
(7) speed in transaction	(5) transaction speed	1	0	0
(8) high income	<i>Excluded:</i> the survey is targeted at students	1	0	0
(9) specific age group 26–29	<i>Excluded:</i> irrelevantly narrow for this study	1	0	0
(10) gender	<i>Excluded:</i> irrelevant for this study	0	0	1
(11) positive attitude	<i>Excluded:</i> may be difficult to define	1	0	0

The original factors	Aggregated or excluded factors	Reported number of times as a factor which increases (+), decreases (-), or has no influence (x) on the adoption decision		
		(+)	(-)	(x)
(13) investment experience	(6) investment experience	1	0	0
(15) price	Excluded: derived from the publication with study context unmatching the aims of this research	1	0	0
(16) anonymity	(7) blockchain anonymity	1	0	0
(17) decentralization	(8) blockchain decentralization	1	0	0
(18) security of crypto	(9) blockchain security	2	0	0
(32) security issues		0	1	0
(20) low trust in banks	(10) trust in banks	1	0	0
(5) knowledge of cryptocurrencies	(11) knowledge of cryptocurrency	2	0	0
(14) trust in cryptocurrency	(12) societal perception of cryptocurrency's track record of safety and perceived risk	2	0	1
(19) perceived risk		0	1	2
(26) interpersonal trust		1	0	0
(33) awareness of information privacy		0	1	0
(27) societal mistrust	(13) cultural attitudes and norms	0	1	0
(31) volatility	(14) cryptocurrency predictability	0	1	0
(22) illicit trade	(15) illicit trade	1	1	0
(23) lack of ease of use	Excluded: direct opposite of "ease of use"	0	1	0
(24) lack of trust (reliability)	Excluded: direct opposite of "trust in cryptocurrency"	0	2	0
(25) lack of knowledge of cryptocurrency	Excluded: direct opposite of "knowledge of cryptocurrencies"	0	2	0
(28) trustworthiness	Excluded: similar to "trust in cryptocurrency"	1	0	0
(29) being a student	Excluded: irrelevant for this study	1	0	0
(30) reputation of cryptocurrency	Excluded: similar to "trust in cryptocurrency"	0	1	0

"Illicit trade" and "blockchain security" were two other factors reported to have both positive and negative effect on the adoption decisions. Such findings with regard to illicit trade may be alluding to the possible popularity of cryptocurrencies for illegal operations on the one hand (Mehta and Chawla, 2024), while the same issue was found to be a deterrent for the adoption decision for many potential users. The contrasting ratings of the blockchain security factor can also be interpreted to reflect the trust-related consumer perceptions of the technology underlying the cryptocurrencies, wallets, and exchanges. Some aspects of the technology may be perceived as trusted, whereas other aspects may be perceived as not inciting trust.

Table 3. Aggregated factors and their reported influence on cryptocurrency adoption decisions

Aggregated factors	Reported number of times as a factor which increases (+), decreases (-), or has no influence (x) on the adoption decision		
	(+)	(-)	(x)
Only positive influence			
Trust in government	2	0	0
Transaction speed	1	0	0
Investment experience	1	0	0
Blockchain anonymity	1	0	0
Blockchain decentralization	1	0	0
Trust in banks	1	0	0
Knowledge of cryptocurrency	2	0	0
Only negative influence			
Cultural attitude and norms	0	1	0
Cryptocurrency predictability	0	1	0
Mixed effects			
Blockchain security	2	1	0
Cryptocurrency usefulness/utility	5	0	1
Social influence from relatives and peers	4	0	1
Financial literacy	2	0	1
Societal perception of cryptocurrency's track record of safety and perceived risk	3	2	3
Illicit trade	1	1	0

The fact that many of the factors found in the literature were reported to have both positive and negative effect on the adoption decision motivated the researchers to create a follow-up survey to validate and possibly extend the literature review findings.

4.3 Findings of the follow-up survey

51 survey participants answered that they had at least partial or sufficient knowledge on cryptocurrency. These respondents were given the matrix of 15 factors obtained from the literature review (see Table 4) and asked to provide their opinion on each of these factors as having positive, negative, or no effect on people's willingness to buy or invest in cryptocurrency.

A comparison of results of the literature analysis and the survey data revealed a few similarities and differences (see Figure 4). The factors which were reported as having a positive effect by the literature were mostly supported with the same evaluation by the survey responses. The factors which were evaluated as having a positive effect with a difference larger than 1 nominal point were: the *transaction speed*, *blockchain security*, and the *societal perception and cryptocurrency predictability*, *investment experience*, *blockchain anonymity*, and *blockchain decentralization*. The factor of the *transaction speed* was evaluated as having an effect of 1 nominal point in the literature vs. 3 nominal points

in the survey. The factor of the *blockchain security* was evaluated as having 2 nominal points effect in the literature vs. 4 nominal points in the survey. Finally, the factor of the *societal perception and cryptocurrency predictability* was evaluated as having 0 nominal points effect in the literature vs. 2 nominal points in the survey. One possible explanation for these results is that the survey participants perceive those factors with more confidence to have a positive effect on the adoption of cryptocurrency.

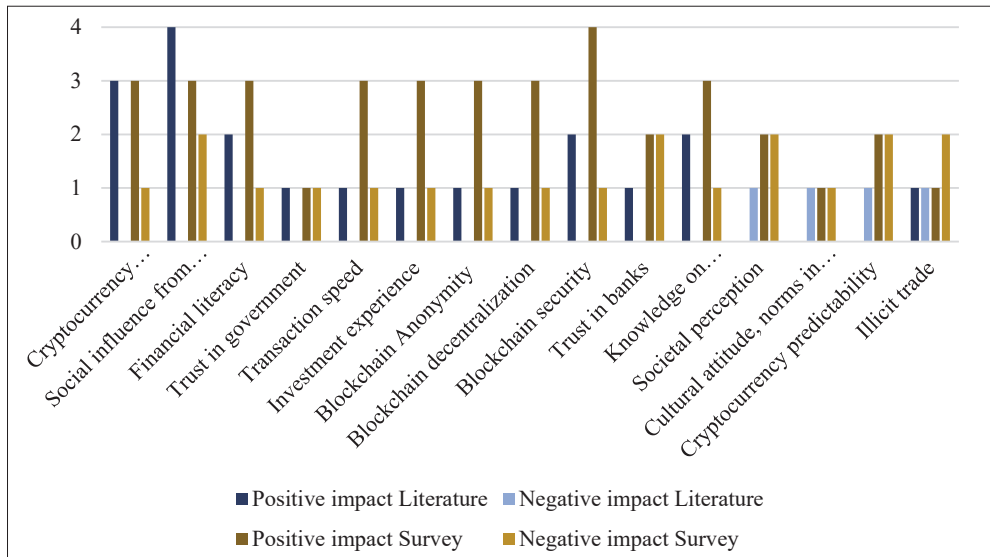


Figure 4. **Normalized impact frequencies of adoption factors: literature vs. survey findings**

There were only 4 factors which were reported as having a negative effect by the literature (see Table 2: (9) blockchain security, (12) societal perception of cryptocurrency's track record of safety and perceived risk, (13) cultural attitude and norms, and (14) cryptocurrency predictability), whereas the survey responses associated negative effect possibilities with each of the 15 factors. Regarding this point, the follow-up survey did not bring the intended resolution to the inconclusiveness of the literature review findings. For example, the factor of illicit trade was reported as having both positive and negative effects in both the literature and by the survey respondents. The same factor was rated as having no effect with the nominal point 3 by the survey participants, whereas the literature review did not find any studies which would reach the same conclusion.

The most prominent dissonance between the negative effect evaluations from the literature and the survey (the difference is larger than 1 nominal point) was received by the factor Social influence and trust in banks: 0 nominal points in the literature vs. 2 nominal points in the survey. This difference may indicate regional specifics or the change in the importance or the influence vector of the given factors since the survey (2021), in which case, perhaps, this can be treated as two growing trends of negative influence on the adoption of cryptocurrencies: as the trust of consumers in the traditional banks is

growing, their willingness to invest in cryptocurrencies is decreasing. Also, recent scams with digital asset exchanges may have given momentum to another negative trend.

The factors which received the equal relative frequency of positive effect evaluations by the literature and survey are the cryptocurrency usefulness/utility (with very strong 3 nominal points), the trust in government (weak 1 nominal point), and the illicit trade (weak 1 nominal point). The factors which received the equal relative frequency of negative effect evaluations were the cultural attitude factor (weak 1 nominal point).

Given the indecisive answers of the respondents of the initial survey on the preferences towards the crypto wallet or the crypto exchange as the preferred choice of technology, we also included the preference questions in the follow-up survey. These questions were asking for non-compulsory open answers. Despite the larger number of respondents in the follow-up survey (95 in total, 51 asked to answer this subset of questions), only 20 respondents provided their answers, and these answers only re-iterated competing perspectives without any indication of concrete and generalizable pros and cons for one or another crypto assets storage option (Table 4). Only two exceptions could be identified: crypto wallets are preferred for security, whereas crypto exchanges are preferred for the transaction speed and convenience (functionality). Some users responded with “I do not know why” or “unsure why”, alluding to their low level of knowledge on the pros and cons of one option over the other.

Comparing to the initial survey, where 7% of the respondents reported to use crypto wallets only and 75% to use both wallets and exchanges, in the follow-up survey, 25% of those who answered this subset of questions reported having only a crypto wallet and 55% reported using or having used in the past both the wallets and the exchanges. While the share of users of the two storage options has changed, the majority of users in both cases were found reporting as being users of both wallets and exchanges.

Table 4. Reasons for choosing crypto wallets or crypto exchanges

Crypto wallet (CCW) only	Crypto exchange (CCX) only	Both CCW and CCX
Easy and convenient to use	Easier to use	CCX is good for frequent trades or for more volatile currency. CCW is good for long-term storage
More trust in a hardware wallet	Easier to use, less risk of losing hardware	CCW feels more secure over CCX, since you have the feeling of ownership
CCW safer and independent from exchange		In CCX, I could set price notifications and buy orders. But it is safer to put money in CCW
Unsure why		CCX for security
Revolut as one platform		I prefer exchange because the access is faster
Safer, more trusted way of holding assets (CCW)		I do not know why
CCW because of its security and since some exchanges have had issues with security		

Out of the total answers, 6 (30%) stated not to be sure why they chose the selected type(s) of the crypto currency ownership platforms. 7 (35%) of the respondents stated that they preferred crypto wallet(s) due to security, safety and storage reasons, compared to only 1 (5%) giving preference to crypto exchanges. Looking at convenience, 3 (15%) of the respondents answered choosing the crypto exchange for the transaction speed and the ease of use. From this comparison, it could be possible to state that more people prefer crypto wallets for safety and larger currency storage, while those people who use the crypto exchange are looking for convenience when dealing with smaller amounts of currency.

4.4 Findings of correlations analysis

Following the qualitative interpretations by the researchers, the survey data was used for correlation analysis by using the Pearson correlation coefficient (see Table 5). When looking for values between 0.4 and 0.69 which mean having an average correlational relationship, 12 data points were found that fit into that range: trust in government and trust in banks (and vice versa), cryptocurrency predictability and cryptocurrency usefulness or utility/knowledge on cryptocurrency/financial literacy/cultural attitude; knowledge on cryptocurrency and financial literacy (and vice versa). There were no higher values to determine higher correlations between the compared factors. It can be concluded from this that, similarly to all former forms of financial means, consumers' trust is primarily affected by the understanding of the utility of that means and financial literacy (Al Reshaid et al., 2024).

Table 5. Correlations analysis

Variable		Trust in govnt	Trust in banks	CC predictab.	CC usefulness/ utility	Knowld. on CC	Financial literacy	Cultural attitude, norms
Trust in government	PC* Sig.	1	0.457** 0.001	0.136 0.341	0.210 0.140	-0.057 0.689	0.103 0.474	0.002 0.987
Trust in banks	PC Sig.		1	0.098 0.495	0.200 0.160	-0.007 0.961	0.218 0.124	-0.001 0.994
Cryptocurrency predictability	PC Sig.			1	0.401** 0.004	0.403** 0.003	0.572** 0.000	0.413** 0.003
Cryptocurrency usefulness/ utility	PC Sig.				1	0.332* 0.017	0.335* 0.016	0.365** 0.009
Knowledge on cryptocurrency	PC Sig.					1	0.547** 0.000	0.273 0.052
Financial literacy	PC Sig.						1	0.193 0.175
Cultural attitude, norms in regards to cryptocurrency	PC Sig.							1

Note: *PC=Pearson Correlation; N=51

5 Discussion

The issue of trust is undoubtedly an important issue for consumers considering investment in cryptocurrency. The specific orientation of trust, however, depends on the intentions and knowledge of the consumers, thus making it difficult to generalize. For example, consumers can have more trust in hardware crypto wallets more than in software wallets, and in software wallets more than in exchanges. Yet, they would trust more exchanges for offering the required functionality or the speed of transactions. Thus, one can generalize that crypto wallets are more trusted for their physical properties, whereas exchanges are more trusted for their functional properties. These findings align with recent studies on cryptocurrency adoption which discuss different sources of conceptualizations of trust – e.g., social support (Kraiwanit et al., 2024), the perceived quality of the web or app interface (Gil-Cordero et al., 2024), or trust based on the expectations of performance indicators of the crypto product (Gómez-Hurtado et al., 2024). These observed differences in our and other studies have a practical implication for the industry and policy. Specifically, they can inform the design of marketing campaigns for the industry, and the design of the educational awareness building campaigns for the policy, e.g., seeking to minimize the risk of investment loss among the general population due to fraud and/or other crypto-related risk factors. These observations are in line with the findings of recent research which suggested that the adoption of cryptocurrencies in general and crypto wallets in particular can be stimulated by targeted marketing campaigns on, e.g., the performance indicators of crypto products (Gil-Cordero et al., 2024, p. 556).

Managerial implications

The practical implications of this study for industry managers are to be found in the realization that there are ambiguities and contradictions in the perception of consumers' trust towards cryptocurrencies. For instance, when leading a product development or marketing campaign, managers must be mindful of the contradictions, and discuss with their teams the ways how these contradictions can be resolved. For example, many consumers prioritize security, while still using crypto exchanges over hardware or offline wallets. Another practical implication of this study to the industry and managers is in its overall positive evaluation of the trust of consumers in cryptocurrency products. This finding can motivate companies to develop new fintech products based on cryptocurrencies. Recent studies suggest that particular attention should be paid to the quality of the web or app interface for the new products as this factor was found to have positive correlation with the willingness to adopt (Gil-Cordero et al., 2024).

One more important implication of this study for all relevant stakeholders – policy, research, and industry – is that the blockchain technology and its cryptocurrency products are highly versatile. This versatility necessitates high precision in analyzing trust relationships and maturity of blockchain solutions to foster further adoption. As the findings illustrate, different types of crypto products play distinct roles in consumer behavior, requiring more specific research methodologies and terminologies. Only by addressing these distinctions,

professionals can gain deeper insights into building more trustworthy, secure, and user-friendly financial solutions. This need for precision aligns with recent perspectives that conceptualize blockchain solutions not only as financial tool but as a platform infrastructure capable of supporting various use cases across sectors and building the foundation for Web 4.0 (Gürpınar, 2025). Viewing blockchain as a foundational platform broadens the lens through which stakeholders assess its trust dynamics, suggesting that trust should be evaluated not only in terms of technology maturity or market behavior, but also in terms of the platform governance, ecosystem coordination, and multi-actor incentives (Grosse et al., 2021). That said, increased precision often limits the pool of available survey respondents, which was the primary limitation of this study. However, with ongoing regulatory advancements and the growing public awareness of blockchain solutions, future studies are likely to benefit from a more informed collective knowledge base.

Theoretical contributions

Based on the results of this study, theoretical implications for research can be discussed. The multi-method and multi-stage design of this paper can serve as a methodological guide for other researchers. This study can also serve as an illustration of the nature of scientific inquiry, and, in this capacity, it helps researchers better estimate the time and scope of their research efforts. Specifically, this study has demonstrated that several consecutive rounds of investigation were required, as the initial research could not produce sufficiently unambiguous results.

We can also suggest that targeted user studies are needed for more enlightening results. Specifically, this study leads the researchers to understanding that there are different degrees of trust towards different sources of information from which consumers can learn about the cryptocurrencies and financial markets. Surprisingly, the most trusted sources of information are the least popular ones, and not the contrary. Specifically, the most popular sources of information are perceived as portraying the crypto products in contrasting images – most positively and most negatively *at the same time*. These findings are also highly relevant for both the policy and the industry, as they can help choose more appropriate communication channels to inform consumers on the benefits and risks of cryptocurrency products and services.

Limitations

This study has a number of limitations. First, convenience sampling can introduce selection bias, and the sample may not fully represent the broader population of cryptocurrency users in terms of demographics or behavior. The second limitation is the relatively small number of respondents. Finally, the use of questionnaires may introduce subjectivity into the research, as different respondents may interpret the survey questions differently.

6 Conclusions

The goal of this study was to investigate the factors affecting consumers' trust in cryptocurrency products in general, and exchanges and crypto wallets in particular. The initial survey resulted in a number of unexpected, somewhat contradicting findings. At the backdrop of the expectations of the importance of trust in shaping consumer preferences towards novel financial products and services, one intriguing finding was that one of the biggest factors that can be attributed to the popularity and adoption of cryptocurrency products is their convenience, and not trust.

In addressing the research questions, we found that trust is not the sole driver of consumer adoption, as previously assumed. While trust is indeed a critical factor in the decision-making process, convenience emerged as an equally significant, if not even more influential, factor in consumer preference. This suggests that consumers are often prioritizing the ease of use, accessibility, and simplicity over the perception of trustworthiness when deciding to engage with crypto products like exchanges and wallets. Probably the most important conclusion we can draw from this research is that consumers differently perceive the different factors affecting their choice of one or another cryptocurrency product. Trust, security, and convenience are all competing factors, but their relative importance depends on individual consumer preferences and their specific use cases. The three-stage setup of this research could not resolve ambiguities completely, although some results can be presented with confidence.

All in all, we can draw a number of conclusions from this research. First, there is limited published research on the factors affecting consumers' adoption decision for cryptocurrency products. Second, the published research findings have gaps, or else they may be presenting the same factors as having different or even opposite effects. Finally, it is evident that consumer knowledge about cryptocurrency products remains low, which can be a significant barrier to trust and widespread adoption.

7 Recommendations

The findings of this research have (somewhat unexpectedly) revealed that textbooks and scientific literature are among the least popular sources of information on crypto currencies, yet the most trusted ones. Combined with the finding of generally low knowledge of cryptocurrency owners on different aspects of crypto technologies and services, we can recommend the fintech industry and policy makers to invest in awareness and knowledge building campaigns to educate consumers on the benefits and risks of crypto assets.

Given that a multi-stage and multi-method research did not eliminate inconclusiveness and sometimes contradictions in knowledge on factors affecting consumer preferences and trust towards cryptocurrency products and services, we can recommend additional targeted, context-specific research to be conducted. Future studies could explore consumer trust and preferences across different demographic groups and geographical regions, as well as investigate the evolving role of educational interventions in improving consumer

understanding of cryptocurrencies and their associated risks. Such research could help identify more precise, actionable insights for both the fintech industry and policymakers.

Author contributions

Vladislav V. Fomin: conceptualization, data curation, formal analysis, funding acquisition, investigation, methodology, project administration, resources, supervision, visualization, writing – original draft, writing – review and editing.

Ugnius Kerulis: data curation, formal analysis, funding acquisition, investigation, visualization, writing – original draft.

Rihards Grāmatiņš: data curation, formal analysis, investigation, visualization, writing – original draft.

Tan Gürpınar: conceptualization, data curation, formal analysis, investigation, methodology, visualization, writing – original draft, writing – review and editing.

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