

Exploring Perceptions of Benefits and Challenges Associated with Cryptocurrencies: A Demographic Analysis among University Students in Poland

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Abstract: This study investigates the differences in perceptions of benefits and challenges associated with cryptocurrencies among diverse demographic cohorts. We focus on gender, field of study, and prior experience as key demographic factors influencing perceptions. Data were collected from 679 university students in Poland using a survey questionnaire. The findings reveal disparities in perceptions based on gender, with males perceiving more benefits and females encountering more challenges. Additionally, regardless of academic background, students tend to perceive the benefits and challenges similarly. Moreover, prior experience with cryptocurrencies significantly influences perceptions, with experienced students perceiving more benefits and fewer challenges compared to their inexperienced counterparts. Our study contributes to the literature by highlighting the importance of considering personal characteristics in understanding perceptions of cryptocurrencies and provides insights for policymakers, regulators, and industry stakeholders to develop targeted strategies for addressing concerns, enhancing adoption, and mitigating risks associated with cryptocurrencies.

Keywords: Cryptocurrencies Perception, Students Opinion, Gender Differences, Field of Study-Related Differences, Prior Experience.

1. Introduction

Numerous studies have delved into cryptocurrencies, often emphasizing economic aspects such as national regulations, taxation, and monetary policies (Benigno et al., 2022; Marthinsen and Gordon, 2022; Raza et al., 2023). While some researchers concentrate on domestic approaches, their focus tends to be primarily economic (Alvarez et al., 2022; Cifuentes, 2019; Li et al., 2023). Many papers center solely on Bitcoin, given its widespread recognition (Alvarez et al., 2022; Köchling et al., 2020; Mzoughi et al., 2022; Nouir and Hamida, 2023). In contrast, our paper adopts an interdisciplinary perspective, treating cryptocurrencies as a multifaceted phenomenon beyond mere economics.

This paper seeks to address a significant research gap by examining how personal characteristics influence the perception of benefits and challenges associated with cryptocurrencies. While numerous studies have delved into various aspects of cryptocurrencies, including economic factors and regulatory frameworks, few have systematically investigated the role of personal characteristics in shaping individuals' opinions and perspectives on cryptocurrencies. Existing literature predominantly focuses on gender-related issues (Jora and Nandal, 2020; Nyhus et al., 2024; Sudzina, Dobes, and Pavlicek, 2023). In our paper, we concentrate on three complementary factors: gender, field of study, and prior experience. Thus, our study aims to provide a deeper understanding of how gender, academic background, and field experience influence individuals' perceptions in this rapidly evolving field of cryptocurrencies.

We purposefully selected our sample for this research by targeting young individuals, specifically university students. This demographic is notably engaged with emerging technologies and solutions in the market, exemplified by the growing interest in cryptocurrencies (Gogus and Saygin, 2019; Szymkowiak et al., 2021). Furthermore, our observations from teaching experiences indicate a rising number of students with cryptocurrency experience. They actively seek to expand their understanding of this topic through various sources, both technological and conventional, driven by two primary motivations: (1) viewing cryptocurrencies as a form of entertainment and leisure activity, and (2) exploring the potential for financial gain.

The structure of the paper is as follows: we begin by presenting the research questions and hypotheses, followed by an outline of the research methodology. Subsequently, we present and analyze the results, leading to a comprehensive discussion. Finally, the paper concludes with a summary of findings, discussion on limitations, and suggestions for future research directions.

2. Benefits and Challenges Facing Cryptocurrencies – the Literature Review

Cryptocurrencies represent a complex and interdisciplinary field, drawing on principles from economics, computer science, cryptography, and finance. Despite its relatively recent emergence, this domain is experiencing rapid growth and evolution, marked by ongoing technological advancements, regulatory developments, and shifts in market dynamics. Challenges such as the enigma surrounding BTC's creator, the absence of a central authority, volatility, intricacy, and legal entanglements contrast with the undeniable advantages, including the unrestricted, anonymous, and swift movement of capital. Notably, instances of cryptocurrencies being exploited for illicit activities, exemplified by the Silk Road case, have been conspicuous. Furthermore, concerns about the environmental repercussions of cryptocurrency operations have emerged due to the escalating energy demands of mining endeavors. The substantial downturn in the cryptocurrency market in 2022 serves as a stark reminder of the risks entailed in cryptocurrency investment (CoinMarketCap, 2024).

The genesis of cryptocurrencies is intricately linked with the emergence of Bitcoin (BTC) in the late 2008 and early 2009 period (Nakamoto, 2009). Facilitated by technologies such as the Distributed Ledger concept, Blockchain technology, cryptography, and peer-to-peer networks, cryptocurrency trading has burgeoned, providing digital alternatives to conventional currencies. The proliferation of cryptocurrencies has been exponential, with the cryptocurrency market assuming a prominence that cannot be disregarded (CoinMarketCap, 2024; Phillips and Graves, 2021).

The volume of literature on cryptocurrencies is extensive. Numerous authors discuss the benefits and disadvantages of cryptocurrencies. Decentralization is one of the prominent benefits highlighted in the literature. Chenguel (2021), Lee (2019), Narayanan et al. (2016), delve into the concept of decentralization, emphasizing its significance in the cryptocurrency realm. Another advantage frequently mentioned in the literature is the lower transaction fees associated with cryptocurrencies. Frankenfield (2023), Tambe and Jain (2023), and Hileman and Rauchs (2017) contribute to the discourse surrounding the economic benefits of cryptocurrencies. Security emerges as a crucial aspect of cryptocurrencies, attracting attention from scholars such as Thul (2021), Zimprich (2019), Lewis (2018), Narayanan et al. (2016), Burniske, and Tatar (2017), Bonneau et al. (2016), as well as Vigna and Casey (2015). These authors emphasize the robust security measures inherent in cryptocurrency systems. Privacy and anonymity are additional advantages frequently explored in the literature. Lewis (2018), Antonopoulos (2017), Burniske and Tatar (2017), Vigna and Casey (2015) shed light on the privacy features of cryptocurrencies, highlighting their importance in preserving user anonymity. Furthermore, the literature also emphasizes the speed of transactions facilitated by cryptocurrencies. Frankenfield (2023), Tambe and Jain (2023), and Hileman and Rauchs (2017) discuss the efficiency of cryptocurrency transactions, underscoring their rapid processing capabilities.

On the other hand one can list the challenges related to the cryptocurrency market. Volatility and risk management emerge as significant challenges in the literature. Almeida and Cruz Gonçalves (2022), Al Guindy (2021), Peng et al. (2018), Baur, Dirk, and Dimpfl (2018), Klein et al. (2018), and Katsiampa (2017) delve into the volatility of cryptocurrency markets and the associated risks, emphasizing the need for effective risk management strategies to mitigate financial losses and ensure market stability. The lack of regulation represents another pressing challenge discussed in the literature (Chenguel, 2021; Lee, 2019; Song, Chen, and Wang, 2023; Kim et al., 2022; Dordal, 2018; Hardy and Norgaard, 2016; Böhme et al., 2015). They explored the regulatory uncertainties surrounding cryptocurrencies, highlighting the absence of clear regulatory frameworks and the resulting legal and compliance challenges faced by market participants and investors. Security risks pose a significant challenge to the cryptocurrency, attracting attention from scholars such as Weichbroth et al. (2023), Yu et al. (2022), Zaghloul et al. (2020), and Zimprich (2019). These authors analyze various security threats, including hacking attacks, fraud, and vulnerabilities in cryptocurrency protocols, underscoring the importance of robust security measures to safeguard digital assets and protect investors. Environmental impact emerges as a constantly growing concern associated with cryptocurrency mining activities. De Vries (2018), Hileman and Rauchs (2017), Peck (2017), Stoll, Klaaßen, and Gellersdörfer (2019), Wendl, Doan, and Sassen (2023), and Vranken (2017) investigate the environmental implications of cryptocurrency mining, particularly the significant energy consumption and carbon footprint associated with proof-of-work consensus mechanisms. Limited acceptance represents a challenge to the mainstream adoption of cryptocurrencies, as discussed by Bajpai (2023), Eisenhardt and Eisenhardt (2023), and LLC (2021). These authors explore the factors contributing to the limited acceptance of cryptocurrencies in various sectors and highlight the barriers to their broader integration into traditional financial systems and everyday transactions.

In summary, the literature review reveals a comprehensive examination of the benefits and challenges facing cryptocurrencies. Figure 1 presents a conceptual model illustrating the benefits (B) and challenges (C) discussed by scholars in the field. This model serves as the foundation for our subsequent analyses. It integrates two demographic variables, specifically gender and field of study, along with students' prior experience.

Code	Benefits	Fields of analyses	Challenges	Code
B1	[Low transaction costs]	Gender Field of study Prior experience	[No issuer]	C1
B2	[Fast transactions]		[Lack of control and independence]	C2
B3	[No issuer]		[Unstable exchange rate]	C3
B4	[Lack of control and independence]		[Interest from the black market]	C4
B5	[Resilience to crises]		[Network security aspects]	C5
B6	[Mining]		[Increasing energy consumption]	C6
B7	[Limited supply]		[Not widely accepted]	C7
B8	[Decentralization]		[Instability]	C8
B9	[Transparency]		[Storage necessity]	C9
B10	[Immutability]		[Risk of loss]	C10
B11	[Easy storage]		[Legislative gap]	C11

Figure 1: The conceptual model of benefits (B) and challenges (C) of cryptocurrencies

3. Research Methodology

3.1 Research Purpose, Questions, and Hypotheses

The primary objective of this paper is to address principal research question: What are the differences in perceptions of benefits and challenges associated with cryptocurrencies among diverse demographic cohorts? The demographic factors examined encompass gender and field of study, alongside respondents' prior experience. To achieve this aim, the study addresses the following research questions:

RQ1: What is the perception of benefits and challenges associated with cryptocurrencies in students' opinion?

RQ2: What are the differences between males and females in their perception of cryptocurrencies' benefits and challenges?

RQ3: What are the differences among students based on their field of study in their perception of cryptocurrencies' benefits and challenges?

RQ4: What are the differences among students based on their prior experience in their perception of cryptocurrencies' benefits and challenges?

To explore above research questions, three hypotheses were formulated:

H1: There are statistically significant differences between males and females in their perception of cryptocurrencies' benefits and challenges.

H2: There are statistically significant differences among students based on their field of study in their perception of cryptocurrencies' benefits and challenges.

H3: There are statistically significant differences among students based on their prior experience in their perception of cryptocurrencies' benefits and challenges.

3.2 Research Procedure

The research undertaken in this paper is part of a broader study aimed at gathering students' opinions and experiences with cryptocurrencies. To address the primary research objective, tackle specific research questions, and test the formulated hypotheses, a quantitative research approach was employed, involving the administration of a questionnaire survey. The research process unfolded through the following phases:

(1) Survey Questionnaire Development: The questionnaire, prepared in Polish, aimed to collect students' opinions on cryptocurrencies, particularly focusing on evaluating the benefits and challenges associated with them. It was created using LimeSurvey software and consisted of five parts. The first part included questions about students' experiences with cryptocurrencies, while the second part explored the sources of information and knowledge about cryptocurrencies that students utilized. The third part was dedicated to students' opinions on the benefits and challenges of cryptocurrencies. The subsequent section aimed to gauge students' beliefs about the future of cryptocurrencies as a mainstream and widely accepted form of payment. Finally, demographic characteristics of the respondents were collected at the end of the questionnaire (Table 1). In this paper, our focus is on the third part of the questionnaire, where respondents were asked to evaluate the following issues: 1. Assess the benefits associated with cryptocurrencies. 2. Assess the challenges and risks associated with cryptocurrencies. A 5-point Likert scale was used for evaluation, with response options ranging from (1) definitely disagree to (5) definitely agree.

(2) Data Collection Process: A pilot survey was conducted in October 2021 to ensure the questionnaire's validity and methodological soundness. Data collection took place from November 2021 to February 2022, with a deliberate selection of university students as the target population. Specifically, the focus was on Generation Z, comprising 679 respondents, which accounted for 87.3% of the final sample (see Table 1). Gender, field of study, and prior students' experience were considered in order to capture students' perspectives on the benefits and challenges of cryptocurrencies across different academic disciplines.

Table 1: Demographics of the research sample

Variable	Categories	Number of respondents	Percentage
Age/ generation	Z: 1995-2009	679	100%
Gender	females	413	53.1%
	males	365	46.9%
Field of study	social sciences	445	65.5%
	exact sciences	190	28%
	humanities	19	2.8%
	natural and medical sciences	25	3.7%
Prior experience	yes	200	29.5%
	no	479	70.5%

(3). Data analysis. To address the research questions and test the research hypotheses, statistical analyses were conducted. Firstly, descriptive statistics such as mean, median (MDN), first quartile (Q1), mode, third quartile (Q3), standard deviation (SDV), skewness (SK), and coefficient of kurtosis (CK) were computed. Secondly, the Mann-Whitney U test was employed to either confirm or reject the hypotheses. These tests were chosen due to their non-parametric nature, which does not require assumptions about the distribution of the data (verified through the Shapiro-Wilk test with $\alpha = 0.05$). The statistical analyses were performed using Statistica package.

4. Results

4.1 Analysis of Benefits and Challenges in the Opinion of Generation Z

To answer the RQ1, the frequency procedures were employed and the results are presented in Table 2.

Table 2: Descriptive statistics for benefits and challenges of cryptocurrencies

Variable	Mean	MDN	Mode	Q1	Q3	SDV	SK	CK
B1	3.57	4	5	3	5	1.22	-0.51	-0.64
B2	3.98	4	5	3	5	1.13	-0.99	0.18
B3	3.24	3	3	3	4	1.15	-0.11	-0.60
B4	3.55	4	5	3	5	1.29	-0.47	-0.85
B5	3.39	3	5	3	5	1.30	-0.35	-0.93
B6	2.91	3	3	2	4	1.18	0.04	-0.71
B7	3.74	4	5	3	5	1.16	-0.69	-0.27

Variable	Mean	MDN	Mode	Q1	Q3	SDV	SK	CK
B8	3.47	3	3	3	4	1.08	-0.24	-0.49
B9	3.44	3	3	3	4	1.07	-0.15	-0.58
B10	3.17	3	3	2	4	1.25	-0.21	-0.86
B11	3.97	4	5	3	5	1.10	-0.93	0.17
C1	2.71	3	3	2	3	1.13	0.18	-0.51
C2	3.05	3	3	2	4	1.34	-0.05	-1.12
C3	3.72	4	5	3	5	1.20	-0.62	-0.53
C4	3.71	4	5	3	5	1.23	-0.65	-0.52
C5	3.63	4	3	3	5	1.16	-0.49	-0.54
C6	3.53	4	3	3	5	1.19	-0.40	-0.69
C7	3.50	3	3	3	5	1.20	-0.32	-0.81
C8	3.69	4	5	3	5	1.13	-0.52	-0.49
C9	2.76	3	3	2	3	1.16	0.08	-0.72
C10	3.71	4	5	3	5	1.20	-0.62	-0.56
C11	3.32	3	3	3	4	1.13	-0.19	-0.48

The results presented in Table 2 shows that, in the scope of the average value, the benefits students perceive as the most important are B2 [Fast transactions], B11 [Easy storage], and B7 [Limited supply] whereas B6 [Mining] they evaluate as the less important one. In case of challenges, the crucial are C3 [Unstable exchange rate], C4 [Interest from the black market], and C10 [Risk of loss], whereas C1 [No issuer] is the less important in their opinion. It is advisable to stress that the results presented in Table 1 embrace all students' opinions regardless of their characteristics. Thus it was decided to perform detailed analyses for respective groups of students. This approach could bring the wider perspective the problem analyzed.

4.2 Benefits and Challenges of Cryptocurrencies for Males and Females

To test hypothesis H1 and answer RQ2, since the authors used convenient samples in the study, the Mann-Whitney U test was employed to determine whether the H1 is supported by empirical data. The test results presented in Table 3 show that there are significant differences (the p -value is lower than 0.05) between students opinion and their gender for benefits in case of B3, B4, B5, B7, and B8 and C1, C2, C4, C5, C9, C10, and C11 in case of challenges. Hence hypothesis H1 is supported in the study.

Table 3: The Mann-Whitney U test results as to for gender comparison

Benefits	Z	p -value	Challenges	Z	p -value
B1	-0.109	0.914	C1	-3.000	0.003
B2	-0.683	0.494	C2	-4.014	0.000
B3	2.310	0.021	C3	-0.059	0.953
B4	3.992	0.000	C4	-2.484	0.013
B5	-2.788	0.005	C5	-3.228	0.001
B6	-1.944	0.052	C6	0.688	0.491
B7	2.227	0.026	C7	-0.332	0.740
B8	6.376	0.000	C8	0.286	0.775
B9	1.526	0.127	C9	-3.315	0.001
B10	-1.718	0.086	C10	-3.757	0.000
B11	-0.272	0.786	C11	-2.748	0.006

Taking into account the test results presented in Table 3 it was decided to show the broader picture of the problem analyzed using frequency procedures. The results are presented in Figure 2. They embrace statistically significant variables only.

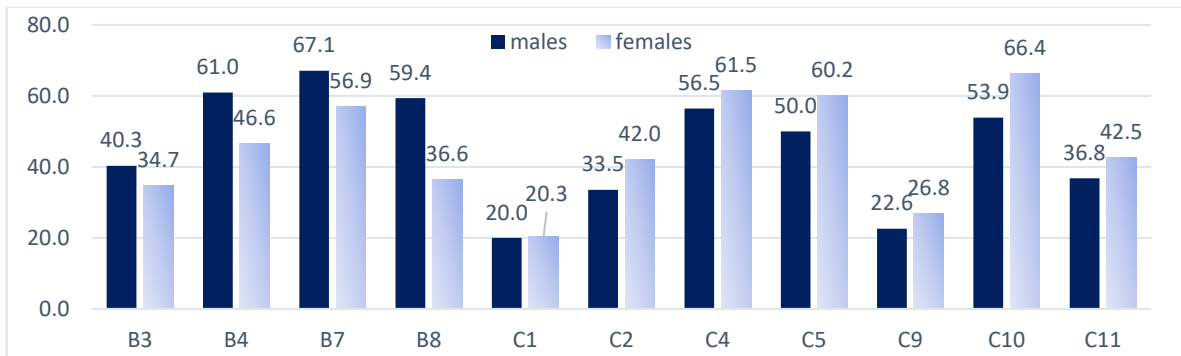


Figure 2: The benefits (B) and challenges (C) in males and females opinion [% values]

The results presented in Figure 2 show that males tend to perceive more benefits associated with cryptocurrencies compared to females. The most notable gender gap is observed in B8 [Decentralization], with males showing a 22.8% higher inclination towards the benefits. Conversely, females appear to encounter more challenges than males. Particularly C10 [Risk of loss] stands out, indicating that females perceive it as a greater risk compared to males.

4.3 Benefits and Challenges of Cryptocurrencies for Students – Fields of Studies Perspective

To test H2 hypothesis and answer RQ3, the Mann-Whitney U test was employed for students representing two distinct fields, i.e. social sciences and exact sciences. We have limited the results to these two groups of students as they represent the majority of the sample. The results are presented in Table 4.

Table 4: The Mann-Whitney U test results as to fields of study

Benefits	Z	p-value	Challenges	Z	p-value
B1	1.729	0.084	C1	0.151	0.880
B2	1.590	0.112	C2	0.735	0.462
B3	1.625	0.104	C3	-0.434	0.665
B4	0.490	0.624	C4	0.848	0.396
B5	0.613	0.540	C5	1.345	0.179
B6	0.071	0.944	C6	-0.508	0.612
B7	-1.785	0.074	C7	2.060	0.039
B8	-0.878	0.380	C8	0.153	0.878
B9	-0.350	0.726	C9	0.889	0.374
B10	-1.914	0.056	C10	0.478	0.632
B11	-0.095	0.924	C11	0.918	0.358

The test results presented in Table 4 show that only for C7 [Not widely accepted] the p -value is lower than 0.05. It means that there were statistically significant differences in students opinions for this one variable exclusively. Thus, hypothesis H2 is rejected.

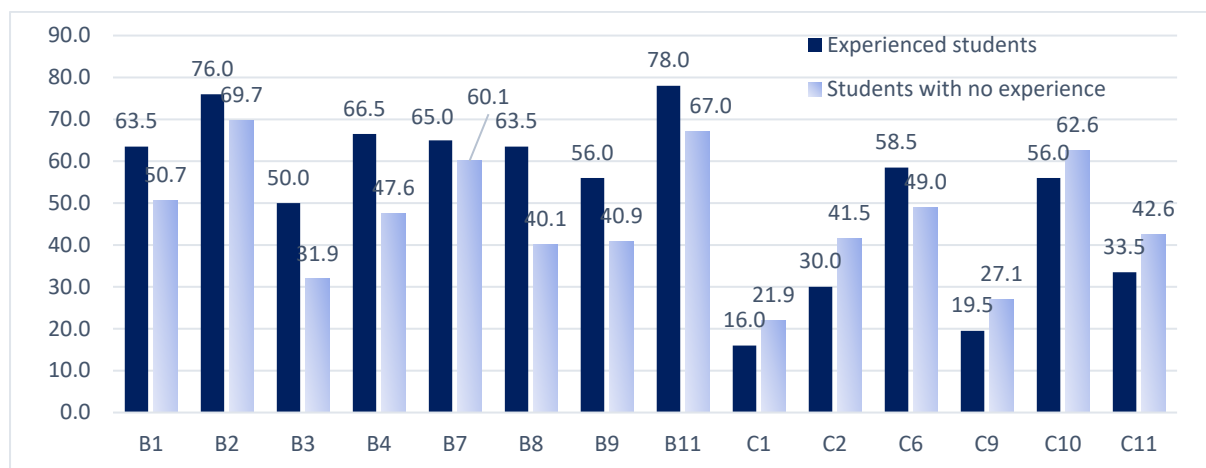
4.4 Benefits and Challenges of Cryptocurrencies – Students' Prior Experience Perspective

To assess hypothesis H3, the results of the Mann-Whitney U test are presented in Table 5, revealing significant differences (p -values below 0.05) between students with and without prior experience. Specifically, these differences are observed for 8 out of the total 11 benefits and 6 out of the total 11 challenges. Therefore, hypothesis H3 is supported by the findings of this study.

Table 5: The Mann-Whitney U test results

Benefits	Z	p-value	Challenges	Z	p-value
B1	2.56651	0.010273	C1	-4.12426	0.000037
B2	3.33058	0.000867	C2	-4.97030	0.000001
B3	5.03646	0.000000	C3	-0.16647	0.867790
B4	5.11063	0.000000	C4	-0.97912	0.327520
B5	-1.09409	0.273918	C5	-0.80210	0.422494
B6	-0.12156	0.903248	C6	1.97373	0.048413
B7	2.14409	0.032026	C7	0.22460	0.822294
B8	6.19076	0.000000	C8	0.14927	0.881343
B9	3.82234	0.000132	C9	-4.56488	0.000005
B10	-1.50378	0.132638	C10	-2.11392	0.034523
B11	3.81112	0.000138	C11	-3.26666	0.001088

Considering the test results displayed in Table 5, it was deemed appropriate to illustrate the disparities between opinions of respondents with and without experience using frequency procedures. The outcomes are depicted in Figure 3, highlighting solely statistically significant variables.

**Figure 3: The benefits (B) and challenges (C), and students experience regarding cryptocurrencies [% values]**

The findings illustrated in Figure 3 indicate that experienced students perceive more benefits compared to those with no experience. The most notable difference is observed in B8 [Decentralization], followed by B4 [Lack of control and independence] and B3 [No issuer]. Conversely, inexperienced students seem to face more challenges, with the most significant difference found in C2 [Lack of control and independence]. Of particular interest is the challenge highlighted by C6 [Increasing energy consumption], suggesting that experienced students view this as a greater concern and challenge compared to those lacking experience.

5. Discussion and Conclusions

Cryptocurrencies constitute a multidisciplinary, relatively nascent, and rapidly evolving domain. Cryptocurrencies have garnered significant attention in recent years, with their potential benefits and challenges subject to scrutiny across various demographics. This study aims to delve into students' perceptions of cryptocurrencies, examining how these perceptions differ based on gender, field of study, and their prior experience with cryptocurrencies. To achieve this objective, four research questions were addressed, along with corresponding hypotheses. The study addresses RQ1 by investigating students' opinions regarding the benefits and challenges associated with cryptocurrencies. As a result, [Fast transactions] and [Easy storage] turned out the most important for students whereas C3 [Unstable exchange rate] C4 [Interest from the black market, and C10 [Risk of loss] were the most important risks.

RQ2 delves into a comparison of the perceptions of benefits and challenges between males and females. Statistical analyses substantiate hypothesis H1, indicating differences between students' opinions and their genders. Our findings indicate that males tend to perceive more benefits associated with cryptocurrencies than females. This aligns with the findings of Jora and Nanda (2020), who identified gender disparities in attitudes toward cryptocurrencies, with male respondents exhibiting greater willingness to use cryptocurrencies than females. These results imply that gender influences individuals' perceptions of the benefits and challenges of cryptocurrencies.

RQ3 is investigated by analyzing differences among students based on their field of study. Although most variables did not exhibit statistically significant differences across fields of study, the identification of one significant difference for challenge C7 suggests the relevance of exploring field-specific perceptions. However, the overall support for hypothesis H2 is limited based on the findings of this study.

RQ4 examines the crucial aspect of individuals' experiences concerning benefits and challenges related to cryptocurrencies. The findings reveal variations in students' perceptions of benefits and challenges based on their prior experiences with cryptocurrencies. Experienced students tend to perceive more benefits and fewer challenges compared to their inexperienced colleagues, indicating that firsthand experience plays a significant role in shaping attitudes towards cryptocurrencies. These results are consistent with prior research (Eisenhardt and Eisenhardt, 2023a).

In summary, the study addresses research questions by analyzing students' perceptions of cryptocurrency benefits and challenges, comparing these views across genders and fields of study, and testing formulated hypotheses. The results offer valuable insights into the factors shaping individuals' perceptions of cryptocurrencies, underscoring the significance of considering gender-based and field-specific disparities in crafting strategies for cryptocurrency adoption and understanding its challenges. Furthermore, the study acknowledges the significance of experience-related factors, demonstrating that prior experience significantly influences individuals' perceptions of cryptocurrencies.

5.1 Research Contribution

This paper contributes to both practice and theory in the field of cryptocurrencies, focusing on gender and field of study differences, as well as prior experience with cryptocurrencies. The findings offer practical implications for policymakers, regulators, and industry stakeholders by highlighting nuanced perceptions of benefits and challenges among selected demographic groups. Understanding these perceptions can inform the development of targeted strategies to address concerns, enhance adoption, and mitigate risks associated with cryptocurrencies.

Policymakers can utilize insights from this study to tailor regulatory frameworks and policies surrounding cryptocurrencies. Recognizing the impact of experience on perceptions can aid in designing regulations that address specific concerns while leveraging perceived benefits. For instance, policies could focus on providing consumer protection measures for inexperienced users while fostering innovation and decentralization in the cryptocurrency space for more experienced users. Investors and industry stakeholders can benefit from understanding how experience influences perceptions of cryptocurrencies. Recognizing the biases introduced by varying levels of experience can guide investment strategies and decision-making processes, helping stakeholders navigate the complexities of the cryptocurrency market more effectively.

Insights into gender-based differences in perceptions can guide efforts to promote inclusivity and diversity in cryptocurrency-related initiatives and investments. The paper extends existing theoretical frameworks by empirically examining the influence of gender, field of study, and prior experience on perceptions of cryptocurrencies' benefits and challenges. By integrating findings from the literature review with empirical data, the study enriches our understanding of the factors shaping individuals' perceptions of cryptocurrencies.

The conceptual model presented in Figure 1 synthesizes the literature on benefits and challenges of cryptocurrencies, providing a comprehensive framework for future research and theoretical development. Overall, the paper bridges the gap between theory and practice in the field of cryptocurrencies, offering actionable insights for stakeholders while advancing theoretical understanding and knowledge in the domain.

5.2 Limitations and Implications

The study's findings are constrained by the sample size and demographic representation, suggesting the need for future research to employ larger and more diverse samples to enhance the validity and generalizability of

the results. Furthermore, longitudinal studies could offer valuable insights into the evolving dynamics of perceptions and behaviors surrounding cryptocurrencies and blockchain technology, taking into account the changing trends and advancements in the field over time. Additionally, qualitative research methods, such as interviews or focus groups, could provide a deeper understanding of the underlying factors that shape perceptions of benefits and challenges across various demographic groups and academic disciplines.

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