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Original Research

The Nexus Between National Culture and Cryptocurrency Adoption: the Moderating Role of Financial Literacy

Dickson Pastory[1], Dionice Lwanga
Department of Accountancy, College of Business Education (CBE), Dar es salaam, Tanzania

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Abstract

Cryptocurrencies are increasingly becoming more popular as cheaper, faster and more secure means of transferring money across the globe while offering diversification benefits to investors. This current study explores the effects of national culture on cryptocurrency adoption across 118 countries. We test how each cultural dimension from the Hofstede model affects cryptocurrency adoption. These are power distance, long-term orientation, uncertainty avoidance, individualism and masculinity. We subsequently assess the moderation effects of financial literacy on the linkage between national culture and cryptocurrency adoption. We employ analysis of variance (ANOVA) and stepwise regression estimations to probe into the magnitudes and significance of postulated relationships. Our results firstly indicate significant disparities in cryptocurrency adoption, but only between countries with high and low uncertainty avoidance. The stepwise regression results revealed a strong negative relationship between uncertainty avoidance and cryptocurrency adoption, with other cultural dimensions exhibiting insignificant effects. Moreover, countries with high uncertainty avoidance but whose adults are highly financially literate were seen to be less vulnerable to fears of uncertainties and risks when deciding to adopt cryptocurrencies. Our findings lay a foundation for further theory development and provide practical implications to cryptocurrency entrepreneurs, governments, users and businesses that accept payments in Bitcoin and other cryptocurrencies.

Keywords: Bitcoin, Cryptocurrency, Hofstede, financial literacy, National culture; Technology adoption.

[1] *Corresponding author's Email: pastorysimio@gmail.com*

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Introduction

During the last decade, cryptocurrencies have experienced a dramatic increase in usage, thus gaining the attention of households, organizations, policymakers and scholars. Since the introduction of Bitcoin in 2008, cryptocurrencies have skyrocketed, with more than 2,000 traded in global financial markets (Sousa et al., 2022). Cryptocurrencies have grown increasingly important to households and organizations due to their secure nature, which is made possible by using a distributed ledger system facilitated by blockchain technology (Giudici et al., 2020). In addition, cryptocurrencies have gained popularity among asset managers for risk diversification because their returns are not highly correlated with those of traditional financial assets, e.g., stocks and bonds. Despite the novelty of cryptocurrencies as a cheaper and faster means of carrying out financial transactions, their overall adoption rates remain low, which calls for more research to understand the factors driving adoption (Dabbous et al., 2022).

The effects of technological innovations have been observed to be unparalleled among households, organizations and countries (Wang et al., 2020). Cryptocurrencies are no exception, as attributed to the fact that different countries have experienced varying adoption rates. National culture is one of the crucial factors that can explain cryptocurrency adoption dynamics across countries. This is due to cross-country disparities in cultural values such as social relations, risk attitudes, ethics, and power dynamics, all of which have been well documented (Hofstede, 1999; Hofstede, 2001a; Hofstede, 2001b; Hofstede, 2008). National culture has a powerful sway on the propensity of households and organizations to adopt technologies because it influences their levels of trust in emerging technologies (Lee et al., 2013). Özbilen (2017) stresses that technology acceptance depends on how well it interacts with its social context. To this end, we employ the Hofstede model to evaluate how national culture affects cryptocurrency adoption. We scrutinize how each of the five cultural dimensions, namely, long-term orientation (LTO), masculinity (MAS), individualism (IND), uncertainty avoidance (UA) and power distance (PD), influence cryptocurrency adoption. Hofstede (2001b) postulates that cultural dimensions, especially UA and IND, can be used to predict the ease and speed of technology adoption. Other studies have also employed the Hofstede model to investigate a similar phenomenon in different technologies (Metallo et al., 2022; Özbilen, 2017; Lee et al., 2013).

In addition, we probe into the potential of financial literacy to moderate the relationship between each cultural dimension and crypt

ocurrency adoption. Hermansson and Jonsson (2021) stress that financial literacy enhances individuals' risk tolerance, which fosters investment decision-making. Empirical evidence points towards the positive role of financial literacy on cryptocurrency adoption (Fujiki, 2020; Zhao & Zhang, 2020). To that end, we seek to empirically answer the following question (s): How does national culture influence cryptocurrency adoption? And what role does financial literacy play in moderating this relationship? We provide findings with theoretical and practical implications to cryptocurrency issuing firms, governments/regulators, retail customers (users) and other businesses.

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Our article extends the existing knowledge of cryptocurrency adoption in two (2) ways. Firstly, there is scant literature concerning the influence of national culture on cryptocurrency adoption. Extant literature on the subject pertains to national culture's role in adopting other technologies such as ICT and mobile phones (Özbilen, 2017; Lee et al., 2013). Similar studies in the cryptocurrency context have investigated how aspects such as perceptions on ease of use, trust and cost, economic and regulatory factors influence cryptocurrency adoption (Sukumaran et al., 2022; Dabbous et al., 2022; Soomro et al., 2021; Zhao & Zhang, 2021; Fujiki 2020; Nadeem et al., 2021). Secondly, we introduce financial literacy to moderate the relationship between Hofstede's cultural dimensions and cryptocurrency adoption.

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The rest of this article is organized as follows; section 2 reviews the literature on culture and technology/cryptocurrency adoption. Section 3 highlights data and methods, while Section 4 presents the results of analyses. Section 5 discusses the results and Section 6 covers conclusions, implications and areas for further studies.

Literature review

Hofstede model

Culture refers to collective programming that separates members of one society from members of other societies (Hofstede, 1999). Cultural values are inherent to groups of individuals, not individuals within society. The famous Hofstede model puts forward five distinct values that define a particular society's culture: uncertainty avoidance, long-term orientation, individualism-collectivism, power distance and masculinity-femininity (Hofstede, 1991). The complete definitions of these cultural dimensions are summarized in Table 1.

National culture might influence adoption when technology cuts across international borders, such as cryptocurrency and blockchain. Garfield & Watson (1998) stressed the need for countries to align their technology infrastructure with their national cultures. This can be attributed to the fact that national culture may influence technology diffusion through users' trust. Hofstede's cultural dimensions may be applied to describe technology adoption in a particular society due to uncertainty and risks associated with emerging technologies (Lee et al., 2013). Cultural dimensions such as individualism and uncertainty avoidance may be instrumental in predicting technology adoption because

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they are associated with ease of use and speed of technology adoption (G. J. Hofstede, 2001). In the interest of brevity, we discuss how each of Hofstede's cultural dimensions influences cryptocurrency adoption in the following sub-section.

Table 1. Definitions of cultural dimensions based on Hofstede's model

Cultural Dimension	Meaning
Power distance (PD)	"The extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally"
Long-Term Orientation (LTO)	"The extent to which a society exhibits a pragmatic, future oriented perspective rather than a conventional historic or short-term perspective"
Uncertainty Avoidance (UA)	"The extent to which people feel threatened by ambiguous situations and create beliefs and institutions in an attempt to avoid them, such as that people with high uncertainty avoidance seek stability, predictability and low risk rather than change and new experiences".
Individualism (IND)	"The degree to which individuals are integrated into groups, such as that individualistic societies show loose ties between individuals and seek forms of society that are more independent".
Masculinity (MAS)	"The degree to which a society is characterized by either assertiveness or nurturance, such as that more masculine countries place greater emphasis on wealth, success, ambition, whereas more feminine countries place greater value on people and helping others"

Source: Hofstede (2001a)

Hypotheses development

This sub-section provides the theoretical underpinnings of how national culture may potentially affect cryptocurrency adoption. We discuss how each of the five cultural dimensions from Hofstede's model influences the adoption of cryptocurrency across countries.

Power distance

The power distance cultural dimension has the potential to influence cryptocurrency adoption. Firstly, in high PD societies, technologies may threaten governing authorities because they diminish their ability to exert control on society members (Zheng et al., 2021). Cryptocurrencies are highly unregulated, decentralized and backed by neither real assets nor governmental claims. These unique features of cryptocurrency have been a significant source of backlash from governments that have banned or restricted their use, e.g., China, Egypt and Bangladesh. Their concerns have been mainly about the anonymity of cryptocurrency transactions which may cause people to engage in activities deemed undesirable by society (Giudici et al., 2020). To date, central banks across the globe are still designing proper mechanisms to control cryptocurrency transactions. Secondly,

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resources are unequally distributed in high PD societies, creating a considerable gap between privileged and less fortunate (poor) individuals (Matusitz & Musambira, 2013). Therefore, privileged individuals may be more likely to use new technologies. So in high PD societies, cryptocurrencies may be viewed as a luxury for a privileged few with the ability to purchase them and internet access to conduct transactions. We, therefore, hypothesize that;

H_1: Power distance has a significant negative relationship with cryptocurrency adoption.

Long-Term Orientation

High LTO societies may experience different cryptocurrency adoption rates than those with low LTO. High LTO societies accentuate values such as building relationships, persistence, loyalty and trustworthiness (G. Hofstede, 2008). High LTO societies are pragmatic in nature because they can adapt their norms and values to changing environmental conditions. These societies believe in learning to build knowledge and expertise to deal with complex situations (G. Hofstede et al., 2010). When a change, i.e., new technology, emerges, high LTO societies do not quickly accept it because their values are geared towards learning and comprehending the difference before rushing to adopt it. But once the society accepts the change, it is usually adopted at a very high rate as opposed to low LTO societies (Lee et al., 2013). It has been more than a decade since the genesis of cryptocurrency following the introduction of Bitcoin in 2008 (Nakamoto, 2008). Henceforth, we expect high LTO societies to have learned and understood the technology. We, therefore, hypothesize that;

H_2: Long-term orientation has a significant positive effect on cryptocurrency adoption.

Uncertainty Avoidance

Societies with high UA tend to shun highly risky situations, and they strive to seek ways to control uncertainties. This is by designing mechanisms to control future events to minimize uncertainty and risks (Hofstede et al., 2010). This contrasts with low UA societies, whose members are socialized to accept risk and uncertain situations (Lee et al., 2013). This also applies to new technologies; high UA societies may be highly skeptical of adopting a particular technology unless their perceived risks disappear (G. Hofstede, 2008). This argument can be used to theorize the linkage between UA and cryptocurrency adoption. Cryptocurrencies are different from traditional financial assets because they are unregulated, decentralized and have no real assets or governmental claims to secure them (Nadeem et al., 2021). They are highly volatile and may be used by criminals to further their illegal activities. Therefore, high UA societies may perceive cryptocurrency as risky in the light of the controversies and uncertainties surrounding it. In light of these uncertainties, we hypothesize that;

H_3: Uncertainty avoidance has a significant negative impact on cryptocurrency adoption.

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Individualism

In societies that exhibit individualistic traits, members are usually self-oriented and tend to gather information on their own rather than collectively from direct and formal sources. They consider themselves independent decision-makers by separating themselves from societal influences (Lee et al., 2013). On the other hand, collectivistic societies emphasize collective decision-making through inter-linkages between societies members bound together by group norms (Hofstede, 2008). This cultural trait can also be used to explain cryptocurrency adoption (Lee et al., 2013). As previously mentioned, cryptocurrency has been associated with many uncertainties and controversies that have led to bans in various countries. In individualistic societies, members may seek their own information by doing the risk-benefit analysis of cryptocurrency to determine if they are worth owning. These members may not be influenced by the overall societal views on cryptocurrency and would make their own decisions about holding it despite their societies' opposition to the technology. This is because members of highly individualistic cultures are not usually influenced by neither others' opinions or society's subjective norms (Srite & Karahanna, 2006). We, therefore, hypothesize that;

H_4: Individualism has a significant positive effect on cryptocurrency adoption.

Masculinity

Individuals in highly masculine societies are driven by pursuing material goods and attaining higher social status. This trait is usually embedded in organizations' and individual societies' education systems. Masculine individuals tend to focus on competitive results, which influences the use of technology (Bollinger & Hofstede, 1987). Highly masculine countries gravitate towards new technology to be competitive by exhausting resources to seek innovative solutions (Özbilen, 2017). This is especially true for "status-providing technologies" that give users an image of status in their respective societies (Hofstede, 2001). This can be evident by looking at Bitcoin, which is the largest cryptocurrency in market capitalization. Experts acknowledge Bitcoin as a new status symbol for social and economic power despite being in virtual form. Bitcoin trades at an average of USD 40,000 per coin, putting it on the list of expensive assets. We, therefore, hypothesize that;

H_5: Masculinity has a significant positive effect on cryptocurrency adoption.

Empirical review of literature

To support our hypothesis, we conducted a thorough review of the empirical literature on how different cultural dimensions of Hofstede's model drive cryptocurrency adoption, as summarized in Table 2.

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Table 2. Summary of empirical review

Author(s) and year	Technology	Methodology	Findings
Metallo et al. (2022)	Healthcare	A single country study conducted in the healthcare/hospital sector using a survey strategy. The study used Partial Least Squares (PLS) to analyze significance of postulated relationships.	Their findings showed that UA, MAS and LTO to be the only cultural values that affect technology acceptance in hospitals
Özbilen (2017)	ICT	One way Analysis of Variance (ANOVA) and regression analysis was used to examine the phenomenon in a longitudinal study covering 148 countries.	All five dimensions with the exception MAS exhibited significant relationship with adoption of ICT
Alhirz et al. (2014)	Enterprise Resource Planning (ERP)	A cross sectional study conducted in Saudi Arabia using a Survey strategy to collect data from 230 ERP users. Structural equation modelling was used to test postulated relationships	The results presented evidence to show a significant role of UA on users' acceptance of ERP. On the other hand, PD and IND exhibited weak relationships with the dependent variable.
Lee et al. (2013)	Mobile phone	A Cross country study comparing US and South Korea using a cross-sectional data analyzed using non-linear Bass diffusion model.	UA, LTO and IND were observed to significantly influence mobile phone adoption.
Matusitz and Musambira (2013)	ICT	The study covered only two dimensions namely; UA and PD in a longitudinal study covering 53 countries. Regression analysis was used to assess the postulated relationships	Negative relationship between UA, PD and adoption of ICT was observed.
Bagchi et al. (2004)	ICT	A cross sectional study following data smoothing by averaging four years. The study utilized ordinary least Squares (OLS) regression estimations for analytics	The results showed significant roles of IND, PD and MAS on adoption of ICT with UA weakly affecting the dependent variable
Hofstede (2001b)	ICT	The study covered 56 countries from across the globe using regression analysis in different years	UA and IND were found to influence adoption of ICT

Different studies have been carried out over the years to assess the influence of culture on technology adoption, with ICT being the predominant context (Özbilen 2017; Matusitz and Musambira, 2013; Bagchi et al., 2004; Hofstede, 2001b). Metallo et al., 2022; Lee et al., 2013; Alhirz et al., 2014) conducted a similar analysis in other technologies, including

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healthcare, ERP, and mobile phones. Extant research on cryptocurrency adoption has focused on the influences of technological, social, economic, and regulatory factors in country-specific contexts, including the USA, China, Lebanon, Pakistan, and Malaysia. Specific factors covered include "risk and value perceptions" (Sukumaran et al., 2022; Dabbous et al., 2022); "perceived trust" (Soomro et al., 2022)"financial literacy" (Zhao & Zhang, 2021; Fujiki 2020); "usefulness and ease of use perceptions" (Nadeem et al., 2021); and "regulatory and social influences" (Saiedi et al., 2021).

To the best of our knowledge, this study is among the very first to examine the influences of culture on cryptocurrency adoption. This may be attributed to the fact that, unlike other technologies discussed, cryptocurrency technology is still manifesting following its first ever introduction in 2008 (Nakamoto, 2008). Since cultural values differ from one country to another (G. Hofstede, 2008), we investigate the phenomenon in a cross-country study that allows for contrasts and comparisons across different countries. We supplement the findings of other cross-country studies that have assessed how different country factors, e.g., economic growth, development level, and education, affect cryptocurrency adoption (Bhimani et al., 2022).

The moderation role of financial literacy

Financial literacy refers to knowledge and comprehension of basic economic and financial concepts required for proper management of financial resources (Carton et al., 2022). It is a crucial ingredient needed when an individual seeks to make well-informed investment decisions. Financial literacy equips individuals with the skills to make well-informed financial decisions in the short and long term due to their knowledge of basic financial concepts, financial products, and services (Mutlu & Ozer, 2021). Individuals possessing high financial literacy tend to invest in riskier assets as opposed to individuals with low financial literacy (Bannier & Neubert, 2016). This can be attributed to the fact that financial literacy improves an individual's comprehension of risk management strategies, making them more risk tolerant (Hermansson & Jonsson, 2021). Adil et al. (2022) show a strong negative relationship between risk aversion and investment decision-making. Surprisingly, financial literacy was observed to positively and significantly moderate the relationship between risk aversion and investment decisions.

This postulation can be well used to explain the cryptocurrency adoption phenomenon. Cryptocurrencies have had their fair share of controversies and uncertainties, which may deter investors. Cryptocurrencies are highly volatile, and they are seen as a speculative bubble with no fundamental value (Giudici et al., 2020). These fears were heightened by the 2018 Cryptocurrency Crash, which saw Bitcoin and other coins plummet to all-time lows. The decision by some countries to totally ban them, as previously mentioned, may add to the uncertain nature of cryptocurrencies. However, financial literacy has been observed to positively influence cryptocurrency adoption amid these risks and uncertainties. A good example can be sourced from Japan, where empirical evidence points to the fact that the majority of cryptocurrency owners in the country are those with high financial literacy (Fujiki, 2020). These individuals were observed to have knowledge and experience about financial management, financial troubles, and credit cards. Zhao & Zhang (2020) support these findings by showing the tremendous role of financial literacy

in fostering cryptocurrency adoption in China, where coins such as Bitcoin have been banned.

It is our belief that since financial literacy plays a major role in improving investing decisions through a better comprehension of risks, it can potentially alter the strength or even direction of the relationship between cultural dimensions and cryptocurrency adoption. We posit that financial literacy may have moderation effects on the relationship between each cultural dimension and cryptocurrency adoption. For instance, our prior postulations hypothesized a negative relationship between UA and cryptocurrency adoption. However, negative effects in a high-UA country with low FL may be dissimilar from those in other high UA countries with high FL. The same may apply to high-IND countries with low FL and high FL, with the latter possibly experiencing higher adoption rates. We therefore hypothesize that;

H_6: Financial literacy positively moderates the relationship between national culture and cryptocurrency adoption.

Data and methods

Data

We use a dataset with 14 major variables, including the Crypto Adoption Index (CAI), Uncertainty Avoidance (UA), Power Distance (PD), Masculinity (MAS), Individualism (IND), Uncertainty Avoidance (UA), Long-Term Orientation (LTO), Financial Literacy (FL), Human Development Index (HDI), GINI Coefficient (GINI), Financial Freedom Index (FFI), GDP per capita (GDPCC), Network Readiness Index (NRI), Control of Corruption (CC), and Regulatory Quality (RQ). The dataset involves a total of 118 countries, which were conveniently selected based on the availability of complete data for all 14 variables. The reason behind convenience sampling was that Hofstede's cultural dimensions and Standard & Poor's financial literacy scores are limited to no more than 120 countries across the globe. To avoid distorting statistical inferences, we preferred not to use the average scores of neighboring countries as an approximation criterion to fill in the missing data for the remaining countries We discarded countries with no scores for the financial literacy and cultural dimensions using the complete-case analysis (list-wise deletion) method. This was after ensuring that the remaining sample was still representative of the population and not biased towards a particular sub-group/continent (Salgado et al., 2016). Our sample size represents 61% of the population and contains countries from all major world regions, namely Africa, North America, South America, Europe, Asia, and Oceania.

Data for all variables in question were retrieved from different sources that are indicated in Table 3. All the data sources utilized originate from reputable organizations whose databases have been employed by other studies. These include the World Bank, Hofstede, Standard & Poor's, United Nations Development Programme (UNDP), and Heritage Foundation, all of which are trusted organizations (Lee et al., 2013). For the case of cryptocurrency adoption, we employed data compiled (Liu et al., 2022), which is among the leading cryptocurrency firms in the world whose data have been employed in similar recent studies (Bhimani et al., 2022). The study is cross-sectional in nature, and

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we employed it using data compiled or prevailing in 2021. This design was deemed appropriate due to the characteristics of the data relating to Hofstede's cultural dimensions and financial literacy. Unlike other variables whose data are compiled on an annual/regular basis, the data for the aforementioned variables do not have a pre-defined frequency of publication. For instance, the global financial literacy scores that are prevailing to date were compiled by Standard & Poor's in 2015, while Hofstede's recent scores for cultural dimensions were provided in 2020. Until these two organizations conduct other surveys in the future to update their data, the current scores prevailed in 2021. This was done similar to other studies that have employed Hofstede's model to explain technology adoption (Özbilen, 2017; Matusitz & Musambira, 2013).

Table 3. Data sources

No.	Variable	Year	Database source
1	Crypto Adoption Index (CAI)	2021	https://blog.chainalysis.com/reports/2021-global-crypto-adoption-index/
2	Power Distance (PD)	2020	https://www.hofstede-insights.com/product/compare-countries
3	Masculinity (MAS)	2020	https://www.hofstede-insights.com/product/compare-countries
4	Individualism (IND)	2020	https://www.hofstede-insights.com/product/compare-countries
5	Uncertainty Avoidance (UA)	2020	https://www.hofstede-insights.com/product/compare-countries
6	Long-Term Orientation (LTO)	2020	https://www.hofstede-insights.com/product/compare-countries
7	Financial Literacy (FL)	2015	https://gflec.org/initiatives/sp-global-finlit-survey/
8	Human Development Index (HDI)	2021	https://hdr.undp.org/data-center/human-development-index
9	GINI Index	2021	https://data.worldbank.org/indicator/SI.POV.GINI
10	Financial Freedom Index (FFI)	2021	https://www.heritage.org/index/download
11	GDP per Capita	2021	https://www.heritage.org/index/download
12	Network Readiness Index (NRI)	2021	https://networkreadinessindex.org/countries/
13	Control of Corruption (CC)	2021	http://info.worldbank.org/governance/WGI/
14	Regulatory Quality (RQ)	2021	http://info.worldbank.org/governance/WGI/

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Methods

Sensitivity analysis

We performed sensitivity analysis to measure how sensitive the outcome variable (cryptocurrency adoption) is to variations in the predictor variables (Hofstede's cultural dimensions) as well as the moderating variable (financial literacy). Sensitivity analysis is appropriate to the setting of this study because it helps to estimate the effects of omitted variables/confounders in the relationship between the main predictors and outcome variables, thus reducing omitted variable bias (Cinelli & Hazlett, 2020). As documented by Bhimani et al. (2022), cryptocurrency adoption can be influenced by a wide range of factors. Therefore, sensitivity diagnostics are vital in estimating the power of these factors in explaining cryptocurrency adoption in the presence of hypothetical confounding variables that may also have effects on the main dependent variables.

Analysis of Variance (ANOVA)

We utilized a one-way ANOVA to examine the differences in cryptocurrency adoption between countries with low and high magnitudes of Hofstede's cultural dimensions as well as financial literacy (Özbilen, 2017). This test is vital to setting the stage for further analyses by showing the extent to which significant differences exist in cryptocurrency adoption between countries belonging to two different extremes of cultural traits and financial literacy. We classified a particular country as having high levels of individual cultural dimensions and financial literacy if it scored at least 50 percent. Countries with scores below this figure were classified as having low levels of the individual cultural dimension and financial literacy (Hofstede et al., 2010).

Stepwise regression estimations

Our study utilized stepwise regression to estimate the best-fit model to explain the relationship between the predictors and the outcome variable. The regression model employed has a total of 12 explanatory variables, five of which are predictor variables, i.e., individual Hofstede's cultural dimensions, and the remaining seven (7) are control variables. In the presence of multiple predictor and control variables, it is appropriate to use stepwise regression (Khatibi Bardsiri et al., 2014). This method helps to maximize the estimation power by utilizing the minimum number of independent variables. It involves back-and-forth iterations that involve an automatic process for selecting predictor variables (Silhavy et al., 2017). We followed an iterative process that started with regressing the main predictors, i.e., Hofstede's cultural dimensions, by excluding the control variables. Then the process continued with the addition of control variables and checking whether it improved the goodness of fit of the regression model. The process was repeated until all the control variables were added to the model. To avoid multicollinearity problems in our analyses, we carried out the variance inflation factor (VIF) test with the cut-off point of 5. We also conducted heteroskedasticity diagnostics using the Breusch-Pagan test to ensure model robustness.

We repeated the stepwise regression procedures for each cultural dimension to test for moderation effects of financial literacy. The moderating variable (FL) was presented as a

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binary variable, with 0 denoting low financial literacy and 1 translating to high financial literacy (*see sub-section 3.2.2*). Each of Hofstede's cultural dimensions was isolated, and stepwise regression was conducted for the moderation effects of FL. The seven remaining variables, namely, HDI, GINI, FFI, GDPCC, NRI, CC, and RQ, were incorporated into the study as control variables (Bhimani et al., 2022). These were introduced to eliminate parameter estimation bias, which occurs as a result of the exclusion of other variables that affect cryptocurrency adoption.

We specify the following model with moderation effects;

$$Yc = \alpha c + \beta 1((PDc/MASc/UAc/LTOc/INDc) \times FLc) + \beta 2(PDc/MASc/UAc/LTOc/INDc) + \beta 3(FLc) + \sum_{k=0}^{k} \beta k X_c^k + \acute{\varepsilon}c, \quad (i)$$

Whereby;

Y = The dependent variable (CAI); c = Country; αc = A constant term; β =Coefficient of independent/moderating variables; PDc/MASc/UAc/LTOc/INDc = Uncertainty avoidance index for a given country; UAI c × FLc = the first interaction term which means the effects of country's individual cultural dimensions on adoption of cryptocurrencies is contingent upon financial literacy; X_c^k= a set of country level control variables that include income inequality (GINI); financial freedom (FFI); control of corruption (CC); regulatory quality (RQ); individual income levels (GDPPC); network readiness (NRI) and standards of living (HDI); ἐc,d= Error term.

Results

Descriptive statistics

The descriptive statistics results reveal some interesting details relating to the main variables of interest (*Table 4*). Firstly, the outcome variable (CAI) has a mean value of 7.06 out of 100, which indicates low overall adoption of cryptocurrencies across the globe (Dabbous et al., 2022). The variations between countries are nonetheless very high, as some of them, such as Vietnam, Turkey, and Ukraine, experience very high adoption rates as opposed to the likes of Angola, Burkina Faso, and Iraq. Overall, global UA and PD are high, with the remaining cultural dimensions having low scores, i.e., below the threshold of 50. The variations between countries in all five cultural dimensions appear to be high, presenting evidence of disparities in cultural values between different countries across the globe. The overall FL is low, i.e., below the threshold of 50, with visible disparities between countries. While countries like Sweden, Denmark, and Australia boast a higher percentage of adults with financial literacy, Afghanistan, Nepal, and Albania have otherwise the least financially literate adults.

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Table 4. Descriptive Statistics

Variable	Obs	Mean	Std. Dev	Min	Max
CAI	178	7.42	11.22	0.00	100.00
PD	178	66.09	20.73	11.00	104.00
IND	178	37.47	20.98	6.00	91.00
GRO	178	46.75	17.54	5.00	110.00
UA	178	66.36	21.71	8.00	112.00
LTO	178	41.93	23.66	0.00	100.00
FL	178	0.39	0.14	0.14	0.71
HDI	178	0.78	0.13	0.45	0.96
GINI	178	37.32	8.18	23.20	63.00
FFI	178	55.07	17.48	10.00	90.00
GDPPC	178	4.24	0.44	3.00	5.07
NRI	178	54.93	14.27	24.90	82.06
RQ	178	58.10	27.13	1.44	100.00
CC	178	55.26	27.67	0.48	100.00

Correlation analysis

We used pairwise correlation analysis to get a sense of how our variables of interest are related to one another (Table 5). Out of all five cultural dimensions, only UA revealed a significant correlation with CAI, i.e., a negative correlation. This seems to indicate that countries whose people have a higher UA tend to be more reluctant to adopt cryptocurrencies. Nonetheless, these findings are not conclusive, as more rigorous tests that followed assessed the relationship between cultural dimensions and cryptocurrency adoption. The results further indicate significant correlations between FL and cryptocurrency adoption, which may provide early evidence of the power of FL to change the relationship between each cultural dimension and CAI.

Table 5. Correlations matrix

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
CAI (1)	1.0													
PD (2)	0.1	1.0												
IND (3)	-0.1	-0.6*	1.0											
GRO (4)	0.1	0.1	0.1	1.0										
UA (5)	-0.2*	0.2*	-0.2	0.0	1.0									
LO (6)	0.1	0.0	0.2*	0.1	0.2	1.0								
FL (7)	0.2*	-0.6*	0.7*	-0.1	-0.2*	0.3*	1.0							
HDI (8)	-0.2	-0.4*	0.6*	0.1	0.2	0.4*	0.6*	1.0						
GINI (9)	0.1	0.12	-0.3*	0.1	-0.2*	-0.5*	-0.3*	-0.4*	1.0					
FFI (10)	-0.1	-0.4*	0.4*	0.1	-0.1	0.2*	0.6*	0.6*	-0.2	1.0				
GDPPC (11)	-0.2	-0.4*	0.5*	0.1	0.1	0.4*	0.6*	0.9*	-0.3*	0.6*	1.0			
NRI (12)	-0.1	-0.5*	0.7*	0.0	-0.0	0.5*	0.7*	0.9*	-0.4*	0.6*	0.9*	1.0		
RQ (13)	-0.2	-0.5*	0.6*	0.0	-0.1	0.4*	0.7*	0.8*	-0.3*	0.8*	0.8*	0.8*	1.0	
CC (14)	-0.2*	-0.6*	0.6*	-0.1	-0.2*	0.3*	0.7*	0.7*	-0.2*	0.6*	0.7*	0.8*	0.9*	1.0

*Significant at 0.05 level

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Sensitivity analysis

The sensitivity analysis results are presented for each individual cultural dimension, FL against CAI (*Figure 1a, 1b, 1c, 1d, 1e and 1f*). The results first reveal the tremendous power of UA to influence cryptocurrency as opposed to other cultural dimensions. Even when the confounding variables are 2–3 times as strong as the predictor (UA), the predictor still has the power to negatively impact cryptocurrency adoption. This can be shown by the three values that lie in the contours below the dotted threshold line and that all indicate negative coefficients of CAI, as highlighted by variations in UA. CAI was also observed to be sensitive to PD, but at a magnitude below UA. For the case of FL, when confounders are over two (2) times stronger than the predictor (FL), then FL cannot be powerful enough to explain cryptocurrency adoption. Therefore, sensitivity analysis results indicate that cryptocurrency adoption in any country is highly sensitive to the degree of its people's comfort with uncertainties and risk.

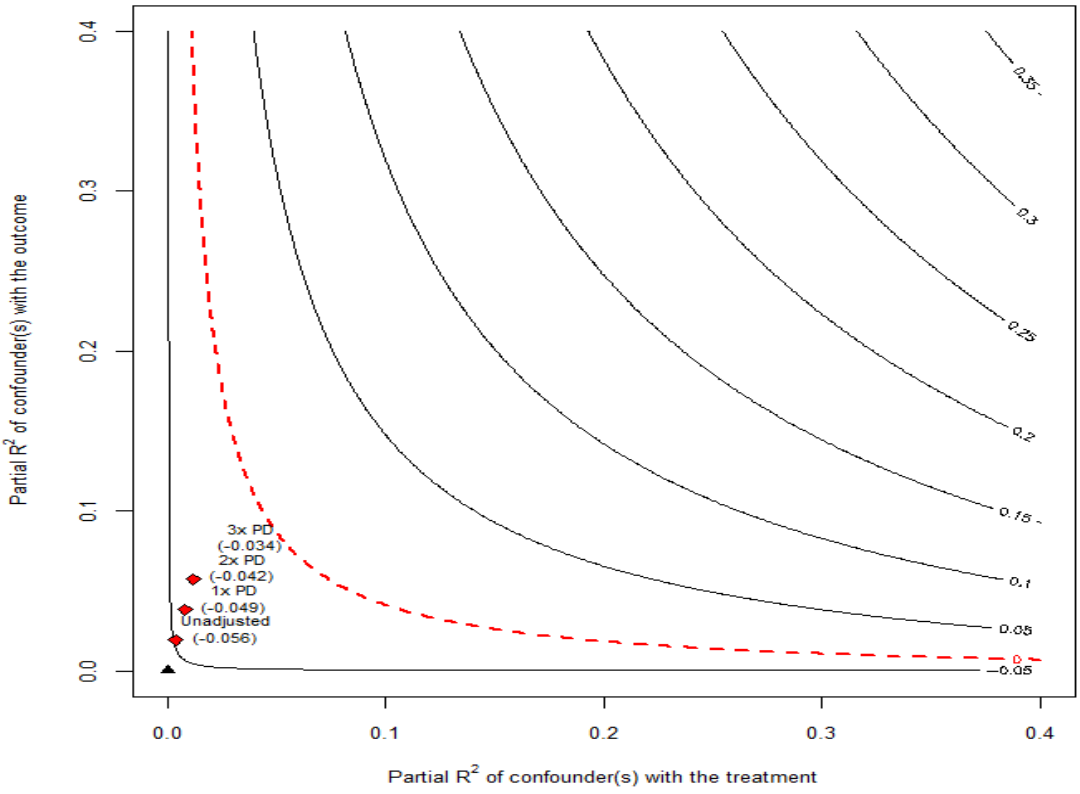

Figure 1a: Sensitivity analysis PD vs. CAI

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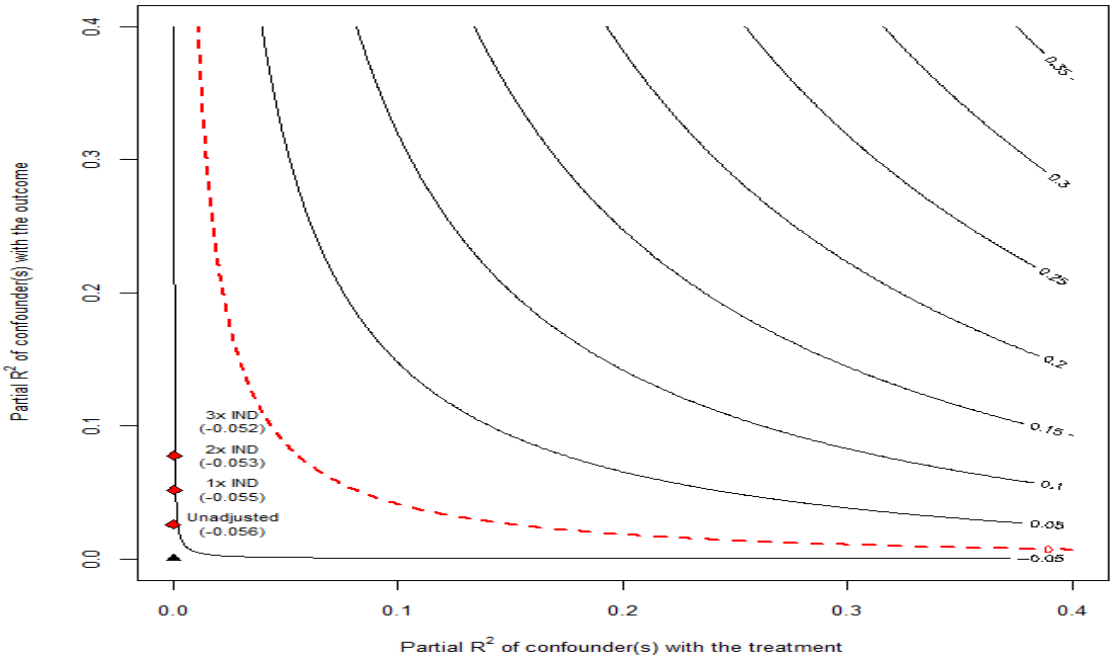

Figure 1b: Sensitivity analysis IND vs. CAI

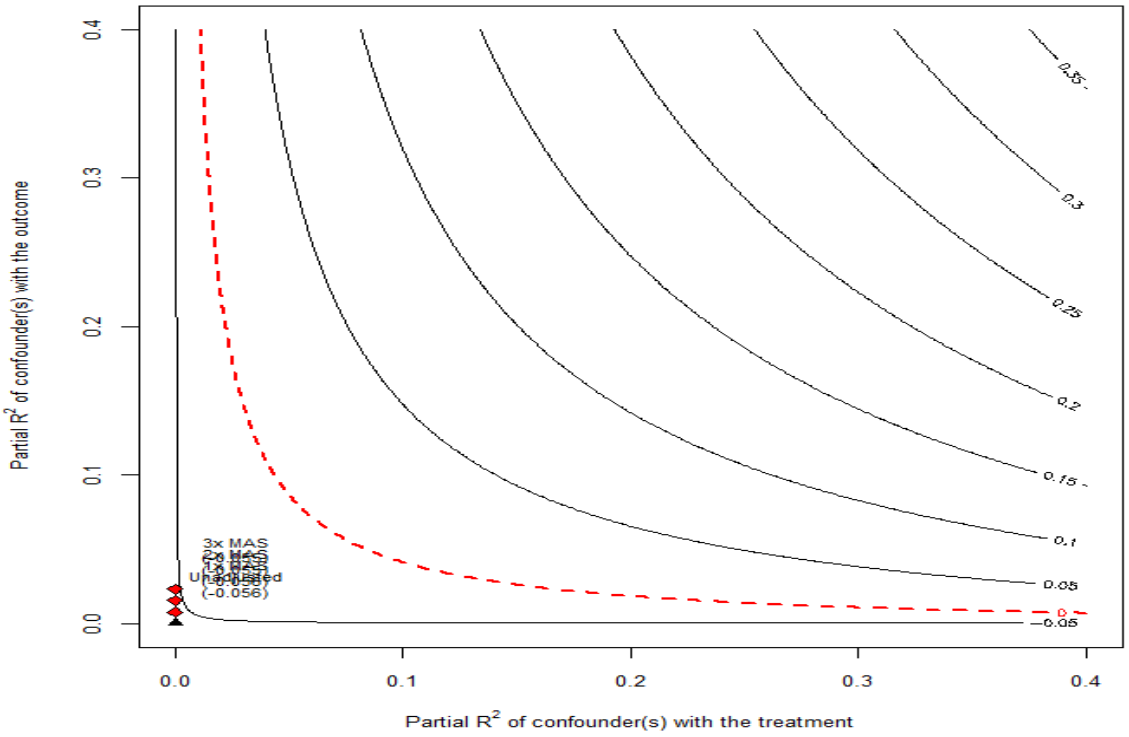

Figure 1c: Sensitivity analysis MAS vs. CAI

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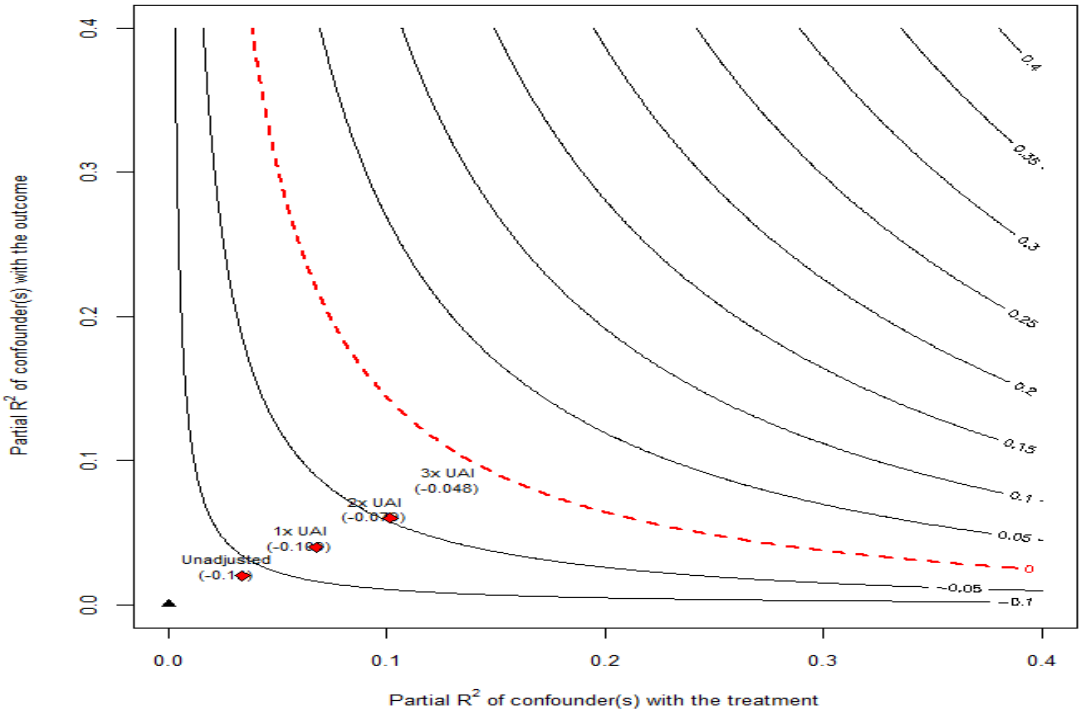

Figure 1d: Sensitivity analysis UA vs. CAI

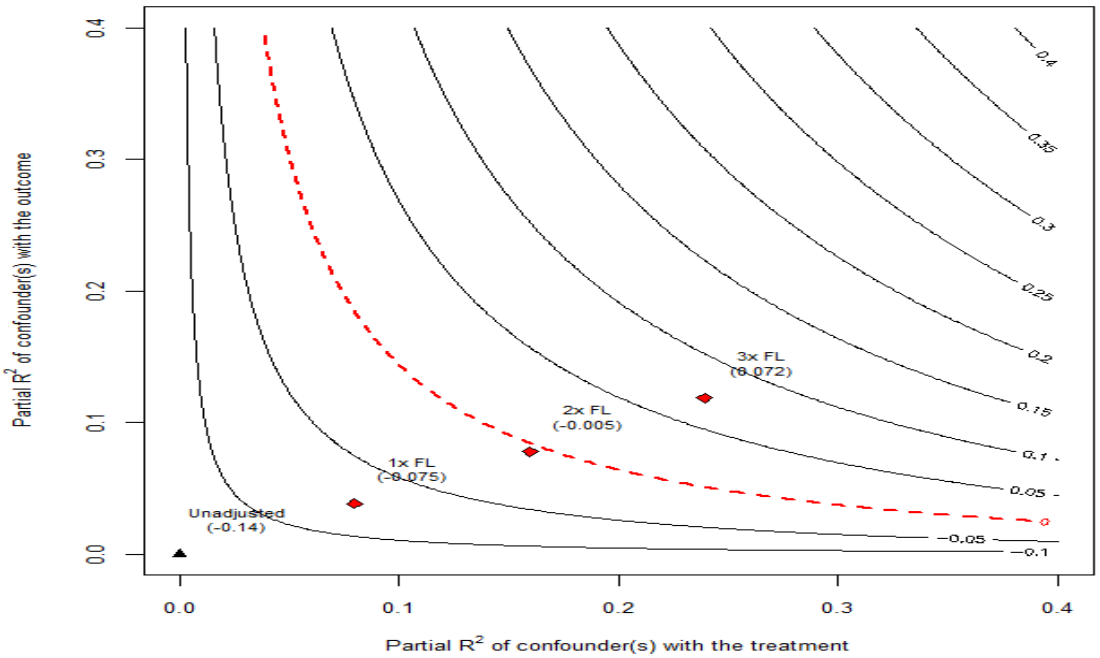

Figure 1e: Sensitivity analysis LTO vs. CAI

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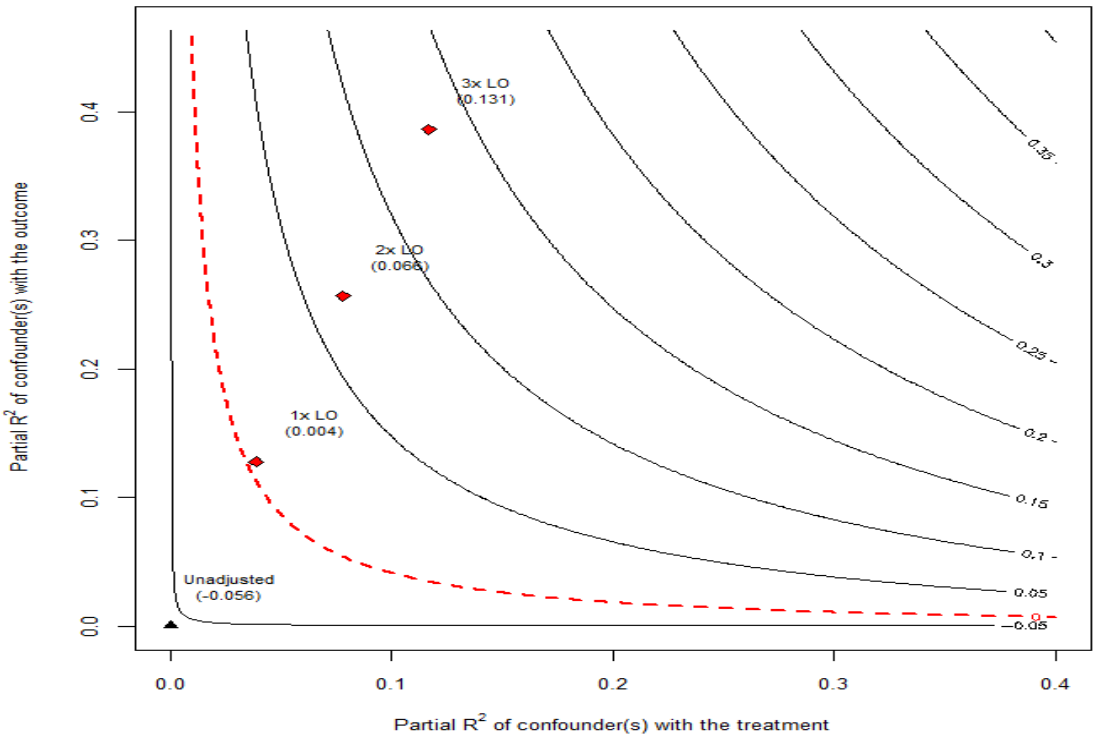

Figure 1f: Sensitivity analysis FL vs. CAI

One way ANOVA results

The results from ANOVA indicate that there are no significant differences in cryptocurrency adoption between countries with high and low PD, MAS, IND, and LTO (Table 6). However, the results reveal significant disparities in cryptocurrency adoption between high-UA and low-UA countries. This provides preliminary evidence of the power of the UA cultural dimension to explain cryptocurrency adoption. In addition, strong disparities were observed in cryptocurrency adoption between countries with high and low FL.

Table 6. One-way ANOVA results

CAI	Sum Sq	Mean Sq	Df	F-Value	Pr(>F)
PD	146	146.5	1	1.164	0.283
IND	214	213.8	1	1.707	0.194
MAS	0	0.16	1	0.001	0.972
UA	666	666	1	5.489	0.0208*
LO	316	316.2	1	2.543	0.114
FL	498	498.1	1	4.056	0.0463*

*Significant at 0.05 level

Stepwise regression estimations

Main effects

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Stepwise regression procedures were carried out to examine the relationship between Hofstede's cultural dimensions and cryptocurrency adoption. The first iteration involved the examination of these relationships in the absence of control variables. The process continued with the addition of individual control variables until the best-fit model was obtained. For the sake of brevity, only the final, best-fit model (with control variables) was presented (*Table 7*). The results for *Model 1* (with no control variables) indicated that only UA has a significant relationship with CAI. Similar results were shown by *Model 2*, which was best-fit to explain the main effects since its coefficient of determination (r squared) was double that of *Model 1, i.e., 0.36*, and Prob>F was well below the 0.05 level. We therefore accept *H3* and reject *H1*, *H2*, *H4*, and *H5*. To overcome the multicollinearity problem, all control variables that registered VIF values greater than 5 were eliminated from the model.

Table 7: Regression estimations results for the relationship between cultural dimensions and cryptocurrency adoption

Variables	Model 1 (Without control variables)		Model 2 (With control variables)	
CAI	Coef.	p-value	Coef.	p-value
PD	-0.001	0.988	-0.058	0.399
IND	-0.100	0.135	-0.073	0.328
MAS	0.027	0.654	-0.007	0.906
UA	-0.123	0.014*	-0.155	0.002*
LO	0.070	0.125	0.087	0.113
GINI			0.055	0.71
FFI			-0.043	0.572
CC			-0.208	0.003*
NRI			0.266	0.025*
Cons	15.197	0.028	18.172	0.11
Prob > F	0.112		0.0209	
R-squared	0.178		0.3609	
F-test	1.83		2.3	
Root MSE	11.03		10.702	
B-Pagan	34.12	0.234*	28.12	0.419*
VIF	< 5.000		< 5.000	
No of Obs	178		178	

*Significant at 0.05 level

Moderation effects of financial literacy

We then proceeded to assess whether financial literacy changes the relationships between each cultural dimension and cryptocurrency adoption. Each cultural dimension was isolated, and the moderation effects of financial literacy were tested without control variables (sub-model 1) and with control variables (sub-model 2). Stepwise regression procedures were followed, and the best-fit model (with control variables) was presented for brevity reasons (*Tables 8a, 8b, 8c, 8d, and 8e)*. For the case of individualism (*Table 8b),* sub-model 1 (with no control variables) was best fitted. The results revealed that financial literacy has no power to change the significance or direction of relationships

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between four cultural dimensions, namely power distance, masculinity, individualism, and long-term orientation. However, when moderating effects were assessed on the relationship between UA and cryptocurrency adoption, the results revealed a significant positive moderation role for financial literacy. Financial literacy was observed to have the power to reduce the negative effects of uncertainty avoidance on cryptocurrency adoption.

Table 8a: Stepwise regression estimation results with moderation effects of financial literacy on the relationship between PD and cryptocurrency adoption

Variables	Model 1 (with no control variables)			Model 2 (with control variables)		
CAI	Coef	Coef	Coef	Coef	Coef	Coef
PD	0.033	-0.049	-0.085	-0.013	-0.052	-0.209
FL		20.894*	25.669		24.265*	44.467
FL*PD			0.081			0.343
CC				-0.181*	-0.148	-0.164*
NRI				0.572*	0.674*	0.700*
HDI				-48.169*	-48.739*	-49.496*
RQ				0.022	0.016	0.022
Cons	5.219	18.845*	21.187	23.091	28.435*	38.187*
Prob > F	0.508	0.074	0.157	0.009	0.0037	0.005
R-squared	0.04	0.044	0.044	0.126	0.1571	0.164
F-test	0.44	2.65	1.77	3.21	3.45	3.07
Root MSE	11.252	11.07	11.116	10.728	10.58	10.587
B-Pagan	12.45*	32.34*	22.34*	19.34*	27.45*	34.32*
VIF	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000
No of Obs	178	178	178	178	178	178

*Significant at 0.05 level

Table 8b: Stepwise regression estimation results with moderation effects of financial literacy on the relationship between IND and cryptocurrency adoption

Variables	Model 1 (with no control variables)			Model 2 (with control variables)		
CAI	Coef	Coef	Coef	Coef	Coef	Coef
IND	-0.058	-0.043	-0.251	-0.058	-0.043	-0.251
FL		21.341	48.380*		21.341	48.380*
FL*IND			0.635			0.635
Cons	9.593*	14.152*	25.139*	9.593*	14.152*	25.139*
Prob > F	0.242	0.086	0.059	0.242	0.086	0.059
R-squared	0.012	0.042	0.063	0.012	0.042	0.063
F-test	1.38	2.51	2.54	1.38	2.51	2.54
Root MSE	11.207	11.082	11.009	11.207	11.082	11.009
B-Pagan	34.56*	34.12*	38.54*	34.56*	34.12*	38.54*
VIF	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000
No of Obs	178	178	178	178	178	178

Significant at 0.05 level

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Table 8c: Stepwise regression estimation results with moderation effects of financial literacy on the relationship between LTO and cryptocurrency adoption

Variables	Model 1 (with no control variables)			Model 2 (with control variables)		
CAI	Coef	Coef	Coef	Coef	Coef	Coef
LTO	0.034	0.062	0.232	0.053	0.043	0.272
FL		-19.136*	0.542*		19.982	7.065
FL*LTO			-0.446			-0.601
CC				-0.167*	-0.133	-0.136
NRI				0.527*	0.634*	0.659*
HDI				-48.759*	-50.308*	-52.992*
RQ				0.021	0.021	0.017
Cons	5.974*	12.305*	5.138	22.240*	23.926*	15.109
Prob > F	0.434	0.039	0.050	0.005	0.004	0.002
R-squared	0.005	0.05	0.066	0.135	0.158	0.178
F-test	0.62	3.35	2.68	3.49	3.47	3.39
Root MSE	11.243	11.006	10.99	10.672	10.575	10.498
B-Pagan	34.56*	12.56*	34.45*	31.34*	31.56*	12.45*
VIF	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000
No of Obs	178	178	178	178	178	178

*Significant at 0.05 level

Table 8d: Stepwise regression estimation results with moderation effects of financial literacy on the relationship between UA and cryptocurrency adoption

Variables	Model 1 (with no control variables)			Model 2 (with control variables)		
CAI	Coef	Coef	Coef	Coef	Coef	Coef
UA	-0.094*	-0.117*	-0.319*	-0.444*	-0.258*	-0.125*
FL		19.83*	49.171*		24.93*	66.775*
FL*UA			0.504			0.663*
CC				-0.206*	-0.159	-0.155
NRI				0.289*	0.405*	0.449*
FFI				-0.063	-0.027	0.013
RQ				0.011	-0.015	-0.043
Cons	13.683*	22.967*	35.039*	15.357*	16.67*	30.612*
Prob > F	0.048	0.0049	0.005	0.007	0.002	0.001
R-squared	0.133	0.188	0.225	0.131	0.366	0.393
F-test	4.000	5.58	4.47	3.390	3.69	3.76
Root MSE	11.084	10.809	10.757	10.693	10.523	10.39*
B-Pagan	63.710*	117.12*	161.94*	96.680*	149.27*	95.31
VIF	<5.000	<5.000		<5.000	<5.000	<5.000
No of Obs	178	178	178	178	178	178

*Significant at 0.05 level

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Table 8e: Stepwise regression estimation results with moderation effects of financial literacy on the relationship between MAS and cryptocurrency adoption

Variables	Model 1 (with no control variables)			Model 2 (with control variables)		
CAI	Coef	Coef	Coef	Coef	Coef	Coef
MAS	0.021	0.009	-0.002	0.025	0.006	-0.044
FL		16.249*	17.276		26.311*	31.293
FL*MAS			0.023			0.108
NRI				0.408*	0.588*	0.593*
RQ				-0.107	-0.071	-0.072
GDPPC				2.560	0.298	0.172
HDI				-44.674	-43.566	-43.276
Cons	6.435*	13.364*	13.851	13.952	21.888	24.343
Prob > F	0.723	0.101	0.207	0.072	0.017	0.031
R-squared	0.08	0.09	0.09	0.085	0.128	0.138
F-test	0.13	2.34	1.55	2.09	2.71	2.31
Root MSE	11.267	11.099	11.147	10.972	10.763	10.808
B-Pagan	34.211*	28.341*	22.341*	13.452*	26.452*	23.231*
VIF	<5.000	<5.000	<5.000	<5.000	<5.000	<5.000
No of Obs	178	178	178	178	178	178

*Significant at 0.05 level

Discussions

The current study makes an inquiry into the influence of national culture on cryptocurrency adoption, drawing evidence from 118 countries. The fundamental hypothesis of this study is our postulation that different cultural dimensions of Hofstede's model, i.e., PD, UA, LTO, MAS, and IND, have the potential to explain the cryptocurrency adoption phenomenon. Unlike previously discussed technologies such as ICT, ERP, and healthcare, cryptocurrencies are unique because they belong to the group of financial technologies (Fintech) and carry financial risks inherent in financial assets. To this end, we scrutinize the role that financial literacy plays in changing the strength of the linkage between individual cultural dimensions and cryptocurrency adoption.

The results from sensitivity analysis, ANOVA, and stepwise regression estimations partially support this hypothesis. UA was observed to be the only cultural dimension with a significant influence on cryptocurrency adoption. Moreover, significant disparities in cryptocurrency adoption between high- and low-UA countries were evident. These findings resonate well with Hofstede's postulation that UA plays a more powerful role compared to other cultural dimensions in technology adoption . In comparison to other technologies, the findings of this study resemble those of (Alhirz & Sajeev, 2015) which also revealed UA to be the only cultural dimension strong enough to influence ERP use. Though studies covering other technologies such as ICT, mobile phones, and healthcare have also found other cultural dimensions to influence the process, UA was predominant in each of these studies (Bagchi et al., 2004). Unlike other technologies, the degree of risk and uncertainty surrounding them is immense (Metallo et al., 2022). Being financial assets, cryptocurrencies are subjected to market risks similar to stocks and bonds. Adding

to the fact that they are not backed by any security, their prices have been extremely volatile when compared to other assets. Moreover, they have been embroiled in controversy around the world following the Great Crypto Crash of 2018 and government bans in some countries (Giudici et al., 2020). The documented risks and uncertainties revolving around cryptocurrencies may provide a plausible explanation for why high-UA countries have low adoption rates.

By taking a pragmatic view, our findings spotlight the power of UA to explain cryptocurrency adoption. However, FL may have the potential to alter the relationship between the remaining cultural dimensions and cryptocurrency adoption. Therefore, our study further examined the moderation effect of financial literacy on the relationship between each cultural dimension and cryptocurrency adoption. Preliminary findings highlight significant differences in cryptocurrency adoption between high- and low-FL countries. This corroborates findings from earlier research that observed elevated levels of cryptocurrency adoption in highly financially literate countries (Zhao & Zhang, 2021). The regression results reveal a strong positive moderation role of FL on UA cultural dimension alone thus partially accepting H6. FL was found to have an insignificant power to change the nature of the insignificant relationship between the remaining cultural dimensions and cryptocurrency adoption. These findings indicate that countries with a high level of financial literacy are less likely to be concerned about uncertainties and risks when deciding whether or not to use cryptocurrencies. Financial literacy has the potential to change or reduce the negative effects of high UA on cryptocurrency adoption. This is due to the fact that high UA has been associated with risk-aversion behavior, but FL has the potential to neutralize this behavior by improving investment decision making (Adil et al., 2022). Scrutinizing the linkage between Hofstede's cultural dimensions and cryptocurrency adoption offers fresh insights for theory and managerial practice.

Conclusions, implications and limitations

Conclusions

The proliferating popularity of cryptocurrencies has aroused the interests of researchers, investors, governments, and the general public. The advantages of cryptocurrencies such as Bitcoin have been well documented, to the point that they have been regarded as the future of global commerce. The acceptance of Bitcon and other cryptocurrencies as a payment option by companies such as Microsoft, Starbucks, and AT&T further solidifies their benefits. There has been a growing scholarly focus on the examination of behavioral influences such as attitudes, perceptions, and trust on cryptocurrency adoption. However, literature on the effects of culture on cryptocurrency adoption has received limited attention. Borrowing from studies in other technologies, our article spotlights the influence of national culture on cryptocurrency adoption based on the Hofstede model. It further investigates the moderating role of financial literacy in the linkage between each cultural dimension and cryptocurrency adoption. The findings suggest that cryptocurrency adoption is highly sensitive to an individual country's UA alone. Moreover, UA was found to have a significant negative impact on cryptocurrency adoption, while the remaining dimensions exhibited insignificant effects. Nevertheless, our findings indicate that FL positively moderates the linkage between UA and cryptocurrency adoption.

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Theoretical contributions and implications

The findings of our study create a more nuanced understanding of the cryptocurrency adoption phenomenon, and several theoretical implications emerge from them. The findings from our inquiry speak volumes because little is known about the influence of culture on technology adoption decisions (Teo & Huang, 2018). Our work supplements previous studies relating to the humanistic view of cryptocurrency adoption from the perspective of decision systems (Sukumaran et al., 2023). We generate crucial insights for further decision-system theorizing by spotlighting how cultural values affect decisions to adopt cryptocurrencies. For many years, dominant technology adoption theories such as the Technology Acceptance Model (TAM) have served as the theoretical foundations for empirical studies on technology adoption and human behavior (Albastaki, 2024). These theories have unfortunately neglected cultural values and their influences on technology adoption.

Our article provides evidence of why cultural considerations are vital in comprehending the technology adoption phenomenon. This provides a good foundation for further theory development, especially in the context of cryptocurrency, since its technology and inner workings stand apart from others. There is a strong need to extend existing theories to incorporate cultural aspects in describing behavioral aspects of technology adoption. Furthermore, the findings reveal that financial literacy has positive and significant moderation effects on the linkage between UA and cryptocurrency adoption. As such, there is a need for theories that can help solidify the theoretical underpinnings of the linkage between culture, financial literacy, and cryptocurrency adoption. Financial technology (Fintech) includes cryptocurrency, and mobile banking, which are highly influenced by financial literacy, unlike other technologies. By linking these three constructs in the same model, our findings lay the groundwork for future Fintech theorizing.

Practical implications

The study's findings attest to the importance of carefully considering specific cultural dimensions when developing strategies to encourage the use of cryptocurrencies. Our findings offer various managerial implications by providing vital information to cryptocurrency entrepreneurs/issuing firms, businesses (using cryptocurrency as a payment alternative), investors (asset managers), households (users and payees), as well as governments/regulators. We provide evidence to show how UA is the single most important cultural dimension that influences cryptocurrency adoption. Henceforth, managerial implications emanating from the findings are inclined towards addressing the *"uncertainty and risk"* aspects of cryptocurrencies. To boost usage in high-UA societies, governments should invest in designing appropriate regulatory and legal frameworks aimed at promoting a positive image of cryptocurrencies. For instance, aspects such as security, economy, and usefulness should be at the forefront of the frameworks that may be instrumental in diminishing the perceived risk of cryptocurrencies (Almajali et al., 2022). Cryptocurrencies offer a cheap, fast, and secure mechanism to make payments. This has led to the inclusion of Bitcoin, Ethereum, and others among payment options by giant companies such as Wikipedia, Microsoft, and AT&T. So cryptocurrency issuers and

businesses that accept payments in cryptocurrency can also benefit from increasing usage by promoting the positive image of these coins in their promotional materials.

One of the matters of concern relating to cryptocurrencies is the aspect of coin losses through online theft, which may deter potential users in high-UA countries from owning these coins. So regulators and cryptocurrency entrepreneurs should design mechanisms to minimize this risk, e.g., through insurance. This has been implemented by firms such as Coinbase and BitGO, but this should be a sector wide effort that can be enforced by regulators (Kethineni & Cao, 2020). On the other hand, cryptocurrencies such as Bitcoin are stored in an e-wallet, with sole access provided to the owner through a password. This may pose challenges to the beneficiaries, especially when they don't have the owner's password. Cryptocurrency regulators are urged to address this uncertainty through mechanisms such as electronic-will/e-will that will be stored electronically through blockchain technology (Nadeem *et al.*, 2021). The findings of this study are also relevant to households/individual users of cryptocurrencies. Cryptocurrency adoption was observed to be low in societies with high-UA, however, FL was found to reverse this relationship. FL has been found to improve an individual's tolerance to risk (Bannier & Neubert, 2016). This is crucial since cryptocurrencies are deemed to be risky assets. Potential investors and users are urged to seek professional financial advice to better understand the risks and rewards associated with these assets. This has been shown to help investors perform better as opposed to those who are driven by social influences (Hermansson & Jonsson, 2021).

Research limitations & avenues for future research.

Despite providing novel insights into the culture and cryptocurrency adoption phenomena, our study has limitations. First and foremost, we used cross-sectional data to look into the phenomenon at one point in time (Dhiaf et al., 2024). Therefore, we couldn't possibly analyze the studied relationships over a period of time. Cryptocurrency adoptions may vary from one year to another, as such a longitudinal study would have helped to explain the adoption behavior across time (Almajali et al., 2022). Secondly, we couldn't study the entire population and settled for a sample size of 118 countries because Hofstede's cultural values survey data do not cover all countries. Future researchers can extend our study by examining the channels by which culture affects cryptocurrency adoption. User behaviors, e.g., attitudes, perceptions, and trust, have been found to influence cryptocurrency adoption (Almajali *et al.*, 2022; Sukumaran et al., 2022). In the light of these mixed views, one can delve into exploring whether user behaviors can mediate/bridge the effects of culture on cryptocurrency adoption in specific contexts.

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