

Cryptocurrency Integration in Qatar's Financial Markets Analyzing the Opportunities, Issues, and Regulatory Implications

Asma Nasser Al-Nassr

Dept. of Computing and Data Science
Oryx Universal College in Partnership
with Liverpool John Moores University
in Qatar
Doha, Qatar
e-mail: 102452@oryx.edu.qa

Moutaz Alazab

Dept. of Computing and Data Science
Oryx Universal College in Partnership
with Liverpool John Moores University
in Qatar
Doha, Qatar
e-mail: moutaz.a@oryx.edu.qa

Abstract— In recent years, digital currencies have prompted discussions about their potential impact on global financial systems. While cryptocurrencies present challenges and opportunities for innovation in secure and efficient transactions, their role remains debatable. This research examines the potential implications of increased cryptocurrency adoption in Qatar. Muslim Sharia law, regulatory standards, and Islamic banking principles influence the country's conservative stance towards cryptocurrencies. Concerns about price volatility and security risks also contribute to this position. However, factors such as the growing expatriate population and technological advancements have initiated conversations about the potential benefits of cryptocurrency ecosystems. These discussions explore possibilities such as reduced transaction fees and more efficient cross-border payments while acknowledging significant remaining hurdles. This study focuses on perceptions of cryptocurrencies in Qatar and explores potential approaches to align cryptocurrency use with Sharia law and regulatory requirements. Employ a hybrid-method design incorporating a comprehensive literature review, stakeholder interviews, surveys, and economic analysis. This study aims to contribute to a balanced assessment of the potential costs and benefits of modifying Qatar's current stance on digital currencies. The goal is to inform decision-making processes and regulatory frameworks, striking a delicate balance between financial innovation and the stability of Qatar's financial services sector. Our findings illuminate the economic, ethical, and legal considerations for responsible cryptocurrency implementation. This approach prioritizes careful consideration and prudent evaluation of all factors involved.

Keywords- *financial innovation; blockchain technology; fintech; economic analysis; cryptocurrency; Islamic finance; sharia law; regulatory framework.*

I. INTRODUCTION

The advent of cryptocurrency and blockchain technology has significantly disrupted established financial systems, facilitating faster, cheaper, and more transparent cross-border transactions. This paper examines the dichotomy of support and skepticism surrounding cryptocurrencies, particularly in Qatar, where Islamic finance principles and Sharia law are crucial in shaping the regulatory landscape. The study

explores the legitimacy of cryptocurrencies within the Islamic framework, the potential benefits of their adoption, and the implications for Qatar's financial sector. The integration of cryptocurrency into global economic systems has elicited varied responses from nations. While some countries embrace cryptocurrencies, others, including Qatar, have taken a firm stance against them due to their incompatibility with Islamic financial principles. This paper aims to analyze the current state of cryptocurrency in Qatar, the challenges of Sharia law, and the potential for regulatory harmonization.

The legitimacy of cryptocurrency remains a contentious issue within the Islamic world. Many clerics oppose cryptocurrencies, citing their lack of intrinsic value and decentralized nature, which contradicts Islamic principles that emphasize trade based on tangible assets. The absence of reliable authority and risk management mechanisms further complicates the adoption of cryptocurrencies in Islamic finance, as excessive uncertainty in transactions is prohibited. The theological perspective that value creation is a divine prerogative adds to the resistance against cryptocurrencies, which are perceived as creating value from nothing. Despite the prevailing skepticism, discussions regarding the reevaluation of cryptocurrency bans in Qatar have emerged, driven by the influx of expatriates and the need for financial innovation in the rapidly globalizing fintech sector. The potential benefits of reduced transaction costs and enhanced cross-border payment efficiency are significant considerations for policymakers. However, the challenge remains whether cryptocurrency can align with Islamic finance norms.

Cryptocurrencies, including Bitcoin and Ethereum, utilize cryptography and blockchain technology, providing enhanced security and anonymity in transactions. Unlike traditional fiat currencies, cryptocurrencies operate outside the interest-based financial system, which aligns with Sharia law prohibitions against interest. Ethereum, as a versatile platform for decentralized applications and smart contracts, and Monero, which offers additional anonymity, exemplify the diverse functionalities of cryptocurrencies. The growth of cryptocurrency services, such as Binance, reflects a burgeoning crypto-favored culture that could benefit Qatar's economy. Qatar could mitigate wealth leakage and enhance

its Gross Domestic Product (GDP) by fostering domestic cryptocurrency trading and tokenization initiatives. The study highlights the importance of developing a regulatory framework that accommodates cryptocurrency while adhering to Sharia law, thereby increasing public confidence and understanding of the associated risks and benefits. This paper represents a pioneering effort to explore cryptocurrency adoption in Qatar, addressing this emerging technology's legal, ethical, and financial dimensions. By analyzing the potential for harmonizing cryptocurrencies with Shariah regulations, the study aims to inform decision-making processes and contribute to the establishment of a robust regulatory framework in Qatar's financial sector. The findings underscore the necessity for ongoing dialogue and research to navigate the complexities of cryptocurrency adoption in a context governed by Islamic finance principles.

A. Contributions of the study

The main contributions of this study are as follows:

- i. This study investigates the potential for enhancing cryptocurrency adoption in Qatar, examining the implications of lifting the current ban and addressing associated legal, moral, and financial issues related to its use.
- ii. This study highlights the need to align cryptocurrency usage with Islamic legal principles. It explores whether embracing virtual currencies can promote financial inclusivity and creativity within the Qatari fintech ecosystem.
- iii. The research emphasizes the benefits of digital currencies in expediting cross-border payments and reducing transaction costs while acknowledging counterarguments against their adoption.
- iv. By gathering insights from various stakeholders, including government officials and religious scholars, the study aims to suggest the development of new regulations that balance innovation with stability, contributing to the discourse on cryptocurrency governance in Islamic contexts.

This paper is organized as follows: Section 2 discusses the related work. Section 3 outlines the methodology, including data collection, analysis, significance, and ethical considerations. Section 4 presents the proposed framework, including integrating anti-money laundering measures with traditional banking and lessons learned from neighboring industries. In Section 5, we compare our work with existing research. Finally, Section 6 discusses the conclusions.

II. LITERATURE REVIEW

This literature review, with a unique geographical focus on the Middle East and surrounding regions, delves into the implications and adoption of cryptocurrencies. It explores how technological innovation, religious principles, and regulatory frameworks shape the acceptance and integration of digital currencies within these settings, offering a fresh perspective on this emerging field.

This literature review outlines the complex nature of cryptocurrency adoption and regulation across the Middle East and surrounding regions. Despite the potential to

transform financial systems into more efficient ones and drive economic growth, integrating cryptocurrencies with religious doctrines, legal uncertainty, and socio-economic factors remains a significant obstacle. However, the potential of blockchain technology to overcome these obstacles and revolutionize the financial landscape in the Middle East is a cause for optimism.

Khan et al. [15] examine the intersection of blockchain, cryptocurrency, and Shariah compliance, highlighting the tension between high-return investments and Islamic economic principles. Although many scholars agree that blockchain technology meets Shariah requirements, cryptocurrency is widely considered haram. The study has two main objectives: to examine the technological framework of blockchain and its application in cryptocurrencies and to assess Shariah's governance of cryptocurrencies and digital tokens, such as Bitcoin. This study provides valuable insights into the compatibility of emerging financial technologies with Islamic principles.

In February 2023, Ammy et al. [5] studied library research, "Investing in Cryptocurrency through the Lens of Islamic Economics," studied library research, examined the Quran, Hadith, Ijtihad, and Qia in cryptocurrency investing, and concluded that the government should protect cryptocurrency investors through appropriate regulations [5]. In Islamic finance, some cryptocurrencies are considered illegal due to gharar (uncertainty) and maysir (gambling), but cryptocurrency transactions are considered permissible under muamalah (transactions).

The study, 'Trade Economy in Qatar: Blockchain and Economic Diversification' in 2020 [2], discusses the initial resistance to cryptocurrencies in the Gulf. However, as technological development and investment skills improved, cryptocurrencies gained global traction, leading to rapid adoption in the Gulf countries. This recognition led to transformative changes in various sectors, highlighting the potential of cryptocurrencies in the Gulf.

Several studies have highlighted the importance of cryptocurrencies in the Gulf. For example, Abdeldayem et al. [11] survey on cryptocurrency in the GCC economy highlighted its potential benefits in the Gulf Cooperation Council (GCC), where remittances are essential. By introducing cryptocurrencies, networks can be streamlined, resulting in faster, more efficient, and safer operations than traditional fiat currency channels.

Foreign remittances play a crucial role in the Gulf countries, including key economic transactions that cross international borders. In their analysis of governance in the context of the rise of blockchain technology in Qatar, Ibrahim and Truby [8] highlight the increasing demand for efficient and cost-effective financial solutions. As foreign entrepreneurs send money back home, the surge of interest in cryptocurrencies in the Gulf becomes more pronounced.

"Trade Finance in Qatar: Blockchain and Financial Diversity" [7] explores how blockchain technology can transform trade finance, which is critical to Qatar's economic transformation. He highlights the challenges MSMEs face in traditional trade finance, which is often complicated and inefficient. Blockchain's decentralization, security,

transparency, and immutability provide a solution to facilitate trade finance, increase the competitiveness of MSMEs, and foster FinTech growth. The paper highlights blockchain as a critical driver of Qatar's financial and commercial economic transformation.

In "Blockchain-Based Supply Chain Financing Solutions for Qatar," Charfedin and Umlai [9] address the significant challenges SMEs face in accessing traditional finance, facing limited financial resources and limited credit history. The ADB and the WTO cite ICC and requirements reports, indicating that the trade deficit is expected to widen, exacerbated by the COVID-19 pandemic. The authors propose blockchain-based solutions to provide more flexible financing options for SMEs in Qatar and highlight the importance of addressing trade finance gaps and the potential of blockchain technology to harness them in addressing these challenges.

Truby et al. [16], in "Global Blockchain-Based Trade Finance Solutions: An Analysis of Governance Patterns and the Impact of Local Laws in Six Jurisdictions," explores blockchain's potential to transform trade finance, reducing inefficiencies and risk, especially for SMEs. The study examines regulatory frameworks in the US, UK, Australia, Singapore, Hong Kong, and Qatar, focusing on various blockchain integration approaches. The authors stress the urgent need for supportive regulatory reforms and harmonized regulatory mechanisms to utilize the benefits of blockchain to ensure full compliance, and ultimately, the economic prospects of SMEs worldwide have increased.

Cryptocurrencies offer potential benefits, such as lower transaction costs, faster processing times, and improved security compared to traditional remittance methods. This has spurred the adoption of new financial technologies, such as cryptocurrency, which is included in this section. Moreover, Dahdal et al. [2], in their "Review of Trade Finance in Qatar," discuss how factors such as faster cross-border exports, reduced transaction costs, and improved security are associated with cryptocurrencies.

III. RESEARCH METHODOLOGY

The research methodology of this study is illustrated below:

A. Research Design

Regarding the research objectives, this study adopts a mixed-method research design, as shown in Figure 1. It involves using qualitative and quantitative methods to examine cryptocurrency adoption in Qatar. Thus, it has an objective ontology. It acknowledges the consideration of quantitative and qualitative positivism and interpretivism epistemological perspectives.

B. Data Collection

This study's primary data collection methods were face-to-face interviews and structured questionnaires issued to various stakeholders in Qatar's financial markets. Primary quantitative data was attained through surveys and questionnaires targeted at a sample Qatari population. We also received economic statistics from official reports.

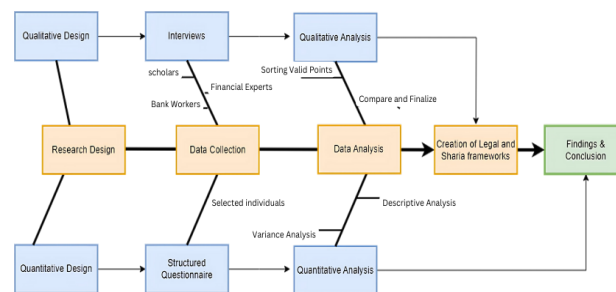


Figure 1. Research Methodology Chart.

C. Data Analysis

Quantitative data from questionnaires was analyzed to examine participants' responses. Qualitative narration from interviews provided rich information for further elaborating on the subjects' responses. Descriptive statistics analysis was applied to quantitative data. It offered viability in determining the effect of cryptocurrency adoption on the economy of Qatar.

D. Sample Size and Techniques

Three face-to-face interview respondents. Questionnaires were provided online, and tools such as Google Forms were used. Economic analysis also entailed information from official bodies like Qatar's central bank and the Ministry of Finance.

E. Ethical Considerations

In the research process, ethical issues were considered. The participants' privacy was preserved, and their identity was not disclosed. Participants had the right to drop out of the exercise at any time. They also had the right to provide informed consent. The study conformed to the directions of the IRB (Institutional et al.) of Qatar University and other relevant bodies.

F. Significance

Thus, through qualitative and quantitative data analysis and observing ethical practices, this study aims to research cryptocurrency usage in Qatar following the Sharia law and regulations.

G. Statistical Measures

The integration of cryptocurrencies in Qatar has garnered significant interest, prompting varied responses from stakeholders in the financial sector. This analysis explores attitudes towards cryptocurrency integration, focusing on overall sentiment and the critical role of regulatory frameworks. Utilizing JASP (Jeffrey's Amazing Statistics Program) statistical software, as shown in Table 1, the study employs descriptive analysis and graphical representation of frequency distributions, incorporating measures of central tendency (mean, median, mode) and variance (standard deviation, sample variance, skewness, kurtosis).

Statistical measures include the mean, which represents the average value of the dataset. In a Likert scale context, values less than or equal to two point ninety-nine indicate

negative responses, three denotes neutrality, and values greater than three reflect positive responses. The median serves as the middle value of the dataset, interpreted as one (strongly disagree) to five (strongly agree) on a Likert scale. The mode represents the most frequently occurring value in the dataset, indicating the prevalent response without numerical assignment. Standard deviation measures response variability: a higher standard deviation suggests more excellent dispersion from the mean. Sample variance quantifies the spread of data around the mean, with higher values indicating more variability. Standard error reflects the precision of the sample mean; lower values suggest more excellent reliability. Skewness assesses data distribution asymmetry, where positive skewness indicates a rightward tail and negative skewness suggests a leftward tail. Kurtosis describes the "peakedness" of the distribution, where positive kurtosis indicates a leptokurtic distribution (more peaked), while negative kurtosis suggests a platykurtic distribution (flatter).

IV. SUMMARIZED RESULTS OF THE SURVEY STUDY

The survey results, a crucial source of information, offer a comprehensive view of Qatari attitudes toward cryptocurrency integration. Through descriptive statistical analysis, key themes emerged from each variable, revealing stakeholders' varied opinions and concerns. The following sections outline the primary insights gathered from each question in the survey, providing a valuable resource for policymakers and financial institutions. We are interested in cryptocurrency and its implications in Qatar.

The first question concerns integrating blockchain-based cryptocurrencies to exchange goods and services in Qatar. The number of respondents is 162. The mean value of this distribution is 3.27, which indicates that most respondents are marking neutral opinions. The mode result shows that most respondents want to refrain from specifying their views. In variability analysis, the standard deviation of 1.14 shows moderate response variability, meaning the responses are not tightly clustered around the mean. The sample variance of 1.30 also indicates that the variances of responses are mild and do not impact the results meticulously. The standard error value of 0.089 shows that the accuracy of the sample mean compared to the population mean is precise. The negative kurtosis value of 0.51 indicates a flatter distribution of data, which means fewer extreme values and lighter tails. The near-zero skewness of -0.13 indicates that the distribution is nearly symmetrical.

The second question of the study is related to lifting the current ban and amending the existing law to include cryptocurrency in Qatar. The mean response is approximately 3.76, which means the responses are above the midpoint of the Likert scale. The mode value of 4 is assigned to the 'Agree' attribute. The median value of 4 also indicates a positive study result—the Standard Deviation of 1.18 shows only moderate variability. The sample variance of 1.40 also confirms the moderate spread of the responses. The relatively low standard error (0.093) shows that the sample mean is a precise estimation of the population mean. The kurtosis value of 0.432 indicates a slightly flatter

distribution than a normal distribution. The skewness value of -0.727 indicates a left skewness. The data set generally reflects a positive trend, which means the people from Qatar are recommending amending the existing law and lifting the ban.

Table 1 presents the descriptive statistics of the collected data to help provide a clearer understanding of the participant's responses and overall trends in the dataset. The analysis was conducted using JASP, an open-source statistical software widely used for data analysis in social sciences and other fields.

TABLE I. DESCRIPTIVE STATISTICS - PERFORMED ON JASP (JEFFREY'S AMAZING STATISTICS PROGRAM)

Variables	Valid	Mode	Median	Mean	Std. Error of Mean	Std. Deviation	Variance	Skewness	Kurtosis
Blockchain aligns with Sharia principles	162	3	3	3.265	0.09	1.141	1.302	-0.131	-0.514
Amending the law for cryptocurrency	162	4	4	3.759	0.093	1.184	1.401	-0.727	-0.432
Adoption of cryptocurrency	162	4	3	3.265	0.094	1.199	1.438	-0.198	-0.894
Readiness of financial market for crypto	162	3	3	3.235	0.09	1.145	1.311	-0.12	-0.774
Acceptability by vendors and investors	162	4	4	3.525	0.087	1.11	1.232	-0.38	-0.592
Jeopardy to security and transparency	162	3	3	3.222	0.086	1.092	1.193	-0.076	-0.66
Advantages of financial inclusion	162	4	3.5	3.426	0.084	1.074	1.153	-0.308	-0.539
Financial infrastructure for crypto	162	3	3	3	0.088	1.115	1.242	0.164	-0.717
Regulatory exclusion of crypto	162	3	3	3.481	0.07	0.886	0.785	0.084	-0.197
Islamic banking cultural views	162	3	3	3.222	0.086	1.092	1.193	-0.192	-0.454
Decentralized crypto impact	162	3	4	3.568	0.087	1.103	1.216	-0.4	-0.502
Blockchain security concerns	162	4	4	3.395	0.089	1.128	1.272	-0.406	-0.518
Cryptocurrency and illegal use	162	4	4	3.846	0.08	1.019	1.038	-0.755	0.225
Impact on financial transparency	162	4	4	3.636	0.074	0.938	0.879	-0.584	0.214
Financial privacy concerns	162	4	4	3.512	0.084	1.065	1.133	-0.361	-0.485
Smart contracts and execution	162	4	4	3.617	0.075	0.96	0.921	-0.318	-0.276
Regulatory uncertainty impact	162	4	4	3.796	0.079	1.004	1.008	-0.699	0.222

The following variable is cryptocurrency adoption into Qatar's financial market. The average responses are around 3.27 (Mean), almost like the first variable. This indicates that most reactions are coming near the midpoint value with a

slightly positive trend. The median value of 3 also shows a neutral position. However, the mode value 4 gives a positive trend rather than neutrality. The standard deviation of 1.20 and sample variance of 1.44 indicate a moderate spread of responses around the mean value, which shows a diversified opinion. The relatively low standard error (0.094) suggests that the sample mean is precise compared to the population mean value. The negative kurtosis value (-0.894) indicates a platykurtic with few extreme values and lighter tails. The skewness of - 0.198 shows a slight leftward skewness. We suggest that QCB should develop more policies to minimize the risks involved in cryptocurrency transactions.

The fourth variable discusses whether the Qatar financial market is ready or not to use cryptocurrency in the present scenario. This variable provides more fictional values as the government has not lifted the cryptocurrency ban yet. The mean value of 3.23 suggests a small positiveness with most central point responses. The mean value and mode value of 3 also indicate the same results. The standard deviation value of 1.15 and sample variance value of 1.31 indicate moderate variability, indicating the spread of data is around the mean value only. The standard error of 0.090 shows a precise estimation of the sample mean compared to the population mean. The kurtosis is platykurtic here with a negative value of 0.774. The skewness of - 0.120 indicates left-skewed data, which means more responses on the higher end with a tail extending towards the lower back. This suggests that the respondents do not know whether Qatar's financial system is ready to include cryptocurrency.

The following variable concerns the acceptability of cryptocurrency by Qatar's usual vendors and investors to do their financial transactions. The central tendency measures show a positive response with a mean value of 3.52 and a median and mode value of 4. Though the mean value is slightly positive, the median and mode values show a more positive response trend. The univariate analysis (S.D of 1.11 and sample variance of 1.23) shows only a moderate variance. The kurtosis value is - 0.592, which shows a platykurtic, and the skewness of - 0.380 shows a left skewness. The data set reflects a slightly positive response with moderate variability and a skewed distribution. The responses show that the vendors and investors of Qatar are ready to accept cryptocurrency to do their financial transactions.

The next question was to comment on whether integrating cryptocurrency could jeopardize security, privacy, and financial transparency in the Qatar financial market. The mean response of the variable is 3.22, and the median value is 3. The value of mode is also 3, which means most of the responses are centered on neutrality with slight positiveness. The variance analysis shows moderate variability only. The standard deviation of 1.09 and sample variance of 1.19 show a diverse but centered set of responses around the mean value. The kurtosis value of - 0.659 shows that the data distribution is slightly flatter than the normal distribution, meaning fewer extreme values exist. The skewness value of - 0.076 is close to zero, which indicates a nearly symmetric distribution. The data set shows generally neutral to slightly positive sentiment among the respondents.

This suggests that the respondents somewhat lean towards the agreement but are primarily neutral. More discussions and research should be conducted to establish a new regulatory framework to address cryptocurrency's privacy and security issues, inviting the audience to contribute to this important process.

The following variable is the study related to the significant advantages of cryptocurrency for Qatar's financial inclusion. The mean value (3.43) is slightly above the midpoint, indicating that cryptocurrency substantially benefits Qatar's economic inclusion. The median value of 3.5 indicates a slight lean toward the positivity of the given variable. The mode value of 4 indicates that many respondents believe cryptocurrency adoption is helpful for Qatar's financial inclusion. The variance analysis shows moderate variability. The standard deviation of 1.07 and sample variance of 1.15 denotes a moderate spread of values around the mean value. The standard error of 0.084 is comparatively less; therefore, the sample mean's preciseness is very close. In short, the statistical results show that the responses to the statement "Cryptocurrency offers significant advantages for financial inclusion in Qatar" are optimistic but moderate, suggesting a promising future for cryptocurrency in Qatar.

The eighth variable is related to Qatar's financial infrastructure for integrating cryptocurrency, especially as a medium of exchange. The statistical data provided for this variable shows a neutral trend among the respondents. The mean value is precisely 3 in this analysis. Moreover, the median and mode values are also 3. This shows that the respondents are balanced in their answers. The relatively lower standard error (0.084) also indicates the same because the mean value of the sample is exact compared to the population mean. This neutrality suggests that the respondents neither strongly agree nor disagree with the statement. This specifies a balanced result with no robust lean towards either side of the spectrum. The positive skewness and negative kurtosis explain a symmetric data distribution with neither positive nor negative responses.

The following variable checks whether the regulatory entity in Qatar led to the banning of cryptocurrencies following an exclusion. The mean value of 3.48 shows a slight positiveness to the statement. The median and mode values stand at 3, which is due to the generality of the respondents. The standard deviation is less than 1 (0.89), indicating that the Variance is very low in the data set. The sample variance of 0.79 also confirms the low variability of the data set. The value of standard error is also less in this data set. The mistake of 0.069 is merely negligible. The negative kurtosis shows a significantly flatter data distribution, and the slight positive skewness shows a slight rightward skew of the distribution. The positive skew towards agreement (mean>3) indicates that the regulatory entity in Qatar played a vital role in banning cryptocurrency. However, due to its slight positive value, it cannot be strongly pronounced.

The subsequent variable is related to the cultural and ethical views of Islamic banking regarding the adoption of cryptocurrency. The mean score of 3.22 indicates that the

respondents are generally neutral to slightly favorable to the statement. The median and mode values are the same (3), reinforcing the neutrality trend; the standard deviation of 1.092 and sample variance of 1.192 show moderate variability in the data set. The standard error is lower (0.086) in this data set, which means the central tendency measures are precise to the population data. Here, both kurtosis (-0.454) and skewness (-0.192) are slightly negative and near to symmetry. In short, the cultural and ethical views of Islamic banking are critical in the adoption of cryptocurrency in Qatar. However, the neutrality of the data set may be one of the obstacles.

The following dataset concerns cryptocurrency's unregulated/ decentralized use and its effect on Qatar's financial market. The mean value of 3.57 shows a lean towards agreeing that the unregulated/ decentralized use of cryptocurrency could adversely affect the monetary market in Qatar. Both median and mode values are 4 (more significant than the mean value), which establishes that most respondents agree with the statement. The skewness value of -0.400 indicates a slight left skewness, meaning the values towards agreement are higher than those towards disagreement. The negative kurtosis value of -0.502 also suggests that the distribution is near symmetrical with light tails and few extreme figures. In a nutshell, the central tendency measures show that a significant portion of the respondents believe that the unregulated/ decentralized use of cryptocurrency could adversely affect the financial market in Qatar.

The following variable for analysis is related to the security concerns of the blockchain system in which the cryptocurrencies are working. The mean value (3.40) is slightly above the mid value (3.00), which indicates that the blockchain system is a significant drawback of cryptocurrency. Both median and mode have the same value (4), more than the mean (3.40), so most respondents have concerns about cryptocurrency security matters. The standard deviation is 1.13, which indicates a moderate variability among respondents. Skewness (-0.41) and Kurtosis (-0.52) are harmful as they also show some response variations.

The following variable is whether cryptocurrency can easily be used in illegal activities. The mean value of 3.85 is significantly above the mid value of 3.00, which states that respondents agree with the above statement. The median and mode are the same (4), above the mean (3.85). So, most respondents believe that the illegal use of cryptocurrency is a significant issue. The standard deviation of 1.02 indicates nominal variability, which does not create a substantial discrepancy in opinion. The skewness of -0.76 indicates a left skew, which means more responses are gathered towards the higher end of the scale, representing a more substantial agreement with the statement. The kurtosis value is (0.23) positive, which means a few more extreme responses on both ends of the scale, though the central tendency remains towards agreement.

The following analysis of the statement "the pseudonymous nature of cryptocurrency transactions impacts financial transparency/tax evasion." Here, the mean (3.64) is

above the mid value (3.00), indicating that the respondents agree with the statement. The median (4) and mode (4) show that at least half of the respondents agree or strongly agree with the statement. The Standard Deviation is 0.94. There is some variability among the respondent's opinions, but the responses are almost identical, and there is a fair level of consensus. Skewness is (-0.58), with a slight skew to the left, indicating that more responses are on the higher end of the scale, which also agrees with the statement. A positive kurtosis (0.21) indicates a few insignificant extreme reactions. So, we can conclude that most respondents believe cryptocurrency transactions' pseudonymous nature negatively impacts financial transparency.

The next question is: Does the adoption of cryptocurrency enhance financial privacy due to the transparency of blockchain technology? Here, the mean is 3.5 above the midpoint 3. Median and mode are the same values (4) and positively respond to the matter. Standard deviation (1.06) and Variance (1.13) indicate moderate response variability, showing some diversity in their opinions. Kurtosis (-0.49) and Skewness (-0.36) indicate negative values. Overall, the analysis of the responses on this matter is somewhat favorable but varied, reflecting the topic's complexity and nuanced nature.

Statistical analysis of the statement 'smart contracts' in cryptocurrency enable automatic execution of contractual agreements without the need for intermediaries is the next. The mean of the responses is 3.62, which shows that more opinions agree with the statement. The median and mode are the same values (4), indicating a favorable agreement toward intelligent contracts enabling automatic execution without intermediaries. Standard deviation (0.96) and Variance (0.92) show only moderate variability in opinions, indicating some degree of consensus. Kurtosis (-0.28) shows a negative value and is a relatively flat distribution. Skewness (-0.32) is also negative, indicating a leaning towards lower values, which means the responses are more neutral or disagree.

The last variable is the statistical interpretation of the response's regulatory uncertainty regarding the impact of cryptocurrency on investor confidence. The study's mean is 3.80, which shows that most respondents agree with the matter. Median and mode are the same value (4), indicating that regulatory uncertainty highly affects investor confidence. Standard deviation (1.00) and Variance (1.01) show only a moderate variability in responses and some diversity in opinions. The positive kurtosis (0.22) represents the responses indicating moderate agreement only. The negative skewness (-0.70) shows the responses are left-tailed; fewer responses are disagreements.

The analysis reveals cautious optimism among respondents regarding cryptocurrency integration in Qatar, highlighting the need for robust regulatory frameworks to address concerns about privacy, security, and transparency.

V. PROPOSED FRAMEWORK

A. Cryptocurrency and Sharia Law

This discussion is on Cryptocurrency and its relationship with Islamic Law (Sharia). The viewpoint is mainly from the angle of Qatar's legislation.

1) *Creation of Stablecoins*: Stablecoins are digital currencies like Bitcoin or Ethereum. The critical difference is that the currency is backed by something of value, which makes these currencies more stable. Sharia law recommends trade based on something of value. The main issue that Islamic countries are backing from cryptocurrencies is the lack of value behind the coins. Stablecoins can be the answer to such matters. If a country's central bank creates these currencies, the problem of lack of authority can also be eliminated. There are several types of Stablecoins, such as fiat currency-based Stablecoins, commodity-based Stablecoins, crypto-collateralized Stablecoins, etc.

2) *Creation of Central Bank Digital Currency (CBDC)*: The central bank can create its version of digital currency using cryptography technology. The volatile nature of cryptocurrency is a significant reason for rejection, per Sharia law. By creating a currency, the central bank can control uncertainty. The issue of lack of authority can also be eliminated by introducing such currencies. The use of cryptocurrency for criminal activities can be mitigated with strategy. Since the currency is issued and managed by government authorities, there will be a structured regulatory framework. Many countries have issued such currencies. It can improve digital currency circulation and reduce the need to carry cash for everyday use.

3) *Regulation through application*: Cryptocurrencies are traded using third-party applications such as Binance. Cryptocurrency provides anonymity. However, via legal regulation, a country can regulate these platforms to prevent the use of digital currency in criminal activities and reduce the anonymity of its users. The central authority can impose laws that specifically stress the need to conduct KYC (know your customer) and occasionally furnish those details to the legislator. The authority can also draw a framework that compels the platform to submit detailed user activity reports. Money laundering, terrorist funding, and other illegal activities can be mitigated via these strategies.

4) *Global system for cryptocurrency transactions*: Cryptocurrencies like Bitcoin, Ethereum, etc., have unique features that enable them to be used globally. Real-time settlement and transaction speed make them suitable for the current globalized economy. Creating such currency worldwide with the supervision of an international organization, such as the United Nations (UN) or the Arab League, can boost the global economy. Since this currency is created and managed by an international organization in partnership with various countries, it can leverage the technology of multiple participants.

5) Cryptocurrency and Global Finance:

Cryptocurrency is a decentralized digital currency based on blockchain technology. It started in 2009 with Bitcoin. Its advantages include being safeguarded against inflation, cost-effective, and allowing global transactions without boundaries. Conversely, some challenges include high volatility, the potential for criminal use, and difficulties in monetary policy regulation.

From commodity-backed to fiat currencies, which can be unstable and easily affected by inflation rates that result in the evolution of money, there is an alternative decentralized financial system (DeFi). Cryptocurrency attracts people who do not believe in central banks' effectiveness. Nevertheless, there are barriers to its diffusion, such as limited public awareness or knowledge.

6) Sharia, Cryptocurrency, and Global Finance:

Islamic scholars have no strong stand on whether cryptocurrency complies with Sharia law. Some support it because of the historical development of currencies, from barter trade to precious metal exchange to paper currencies. They also propose that cryptocurrency is worth it due to its market price and acceptance as a medium of exchange.

Enthusiasts have claimed that cryptocurrency is harmonious with Islamic finance since it does not partake in interest and could lead to justice in the business context. They also point out that one can own and keep it, so it fulfills the conditions of a valid transaction according to Shariah laws.

Nevertheless, some scholars fight against cryptocurrency because it contains uncertainty (gharar). It is not identified from intrinsically valuable items, and its management is not central. Cryptocurrencies have high volatility and unreasonable changes in value. A group of scholars argue that the above and the use of ICOs exempt them from Shariah compliance.

7) Blockchain Technology and Sharia Compliance:

Blockchain is the technology that underpins cryptocurrencies. It offers features that could align with Sharia principles:

- **Transparency**: Each transaction is documented, and there is transparency in that all the network participants can view these records.
- **Elimination of intermediaries**: For peer-to-peer transactions, one can be done away with or have little or no charges on interest.
- **Immutability**: Unlike in a cheque system, where a transaction can be easily forged, one cannot alter a recorded transaction in a way that would lead to unlawful use of the money.
- **Tokenization**: Putting physical assets on the market electronically makes transactions more accessible and less costly.
- **Privacy in charitable giving**: With blockchain, anonymity can be achieved during a contribution while still maintaining records and ensuring that the funds are allocated as required.

8) *Cryptocurrency Legislation in Qatar*: Qatar's attitude toward cryptocurrency has advanced.

- **2018**: Qatar Central Bank banned the use of cryptocurrencies. It was because of their modification and use for illegal purposes.
- **2020**: The Qatar Financial Authority Charter prohibits the deduction of specific discounts on similar assets in the Qatar Financial Authority.
- **2022**: After a crypto trading platform opens in Qatar, people are advised not to deal with unlicensed companies.
- **2024**: Qatar is already investigating the possibility of having a legal tender status for cryptocurrency, its legalization and categorization, the combating of money laundering through cryptocurrencies, and consumer protection.

Hence, the regulatory environment that Qatar plans to establish is supposed to reflect its global counterparts' main concerns, including fluctuations in the market, protection of consumers, and prevention of immoral activities, such as money laundering and financing of terrorism. It is also possible that the country is engrossed in developing novel and sophisticated coins acceptable under Sharia law.

9) *Creating Sharia-compliant currencies*: The framework proposes several approaches to create currencies that adhere to Sharia principles.

- **Stablecoins**: Stable digital currencies that are linked to another currency, metal, or another type of cryptocurrency to minimize risk. Private organizations could perform this function, provided the government gives them ample power.
- **Central Bank Digital Currencies (CBDCs)**: State-backed digital money that delivers the advantages of digital money yet remains under the command of a state's central bank.
- **Regulation through applications**: Adopt severe policies and legislation for cryptocurrency trading, such as KYC checks and regular filings to the center.
- **Global partnerships**: Issuing an independent world cryptocurrency with the assistance of reliable organizations, such as The World Bank or IMF, that will be backed by the UN legislation and implemented through discussion. It could also promote the ease of cross-border business and trading and offer a substitute for the US dollar.

Currently, Cryptocurrency has a lot of potential. This is evident especially with the rising distrust of traditional banking systems. However, governments must devise sound legal requisites to ensure that investors are shielded from conducting unlawful deeds. There are possibilities for more innovative and less regulated money like stablecoins and CBDCs.

Adopting solutions like digital currencies poses dilemmas and opportunities. For a country like Qatar, this should also be done while complying with Islamic law. Qatar should promote the corresponding regulations and form an environment for innovation in this sphere.

10) *Critical considerations for Moving Forward*
Include:

- **Consumer protection**: Well-defined rules and international collaborations are required to protect the users' interests.
- **Expert engagement**: Therefore, there is a need to engage professionals in cryptology that will give a sound understanding of how cryptocurrencies and blockchain technology work.
- **Alignment with Sharia principles**: Stress the positive role that cryptocurrencies and blockchain may play in attaining higher levels of justice and a fair financial deal.
- **Adaptation and innovation**: People are facing the challenge of accepting change, and the only way to go is to adopt advanced technologies to enhance the economy's growth while competing for space in the global financial market.
- **Broader applications**: Remember that blockchain and other technologies work not only with currencies but might also change multiple aspects of the post-industrial economy.

Lastly, the document reiterates that even though cryptocurrency and blockchain technology pose some risks, they are also opportunities for the further development of new technologies and industries that will grow the economy. Thus, countries that manage to effectively respond to constantly changing legislation and enhance the potential of these technologies may gain a competitive edge in the new world financial arena.

B. Regulatory Framework Model

Qatar is taking steps towards a more strategic approach to incorporating cryptocurrencies into its monetary policy while reducing their associated risks. Qatar's strategy has apparent implications for cryptocurrencies. They are treated like digital objects supported by their inherent value and accounting systems. The QCB does not directly regulate them. This simple definition sets the stage for how these new assets may or may not be legal under Qatari law.

Recognizing the diversity within the cryptocurrency realm,

Qatar distinguishes between three primary categories:

There are payment tokens, utility tokens, and security tokens. Payment tokens work similarly to regular money and are a means of exchange for products and services. Utility tokens provide the right to use blockchain-based products or services, as tokens are keys within related systems—real-world assets back a security token and grant holders' rights, such as shares or voting rights.

1) *Blockchain Technology and Sharia Compliance*: The government strictly regulates entry into the specific market of cryptocurrencies in Qatar through the Qatar Financial Centre Regulatory Authority (QFCRA), which entails a comprehensive licensing process. Some of these standards include having sufficient capital to support the

entity, putting up measures to secure the users, and enshrining clear operational policies. They are already licensed and undergo periodic compliance inspections and audits. These are aimed at placing scrutiny on such organizations. Because of this, all necessary performance requirements can be established as required by law.

2) *Anti-Money Laundering (AML) and Counter-Terrorism Financing (CTF) Measures:* Qatar has prioritized strict AML and CTF procedures in addressing potential cryptocurrency risks. These processes require strict adherence to Know Your Customer (KYC) policies, which require users to verify their identity before processing cryptocurrencies. Continuous monitoring of transactions for suspicious activities ensures prompt detection and reporting to the Qatar Financial Intelligence Unit (FIU) for further investigation.

3) *Consumer Protection and Education:* Qatar understands the challenges and risks associated with cryptocurrencies. Thus, the state emphasizes consumer protection through transparency and education. The policy emphasizes the importance of clearly communicating potential risks to investors. They should be empowered to make informed decisions. In addition, Qatar plans to establish mechanisms for resolving consumer complaints and disputes under the guidelines of the QFCRA. Public education sessions will also be held to raise awareness about the benefits and risks of cryptocurrencies. It will equip individuals with the skills to confidently navigate this changing economic landscape.

4) *Integration with Traditional Banking:* Rather than seeing cryptocurrency as a separate financial system, Qatar intends to integrate digital assets into the traditional banking sector. This approach encourages banks to explore new services related to cryptocurrencies, such as digital asset manager services, the convenience of cryptocurrency payments, and leveraging traditional banks' established trust and structure to provide funds that will be invested in digital property rights.

5) *International Alignment and Collaboration:* Recognizing the global nature of cryptocurrencies, Qatar is committed to aligning its regulatory framework with international standards and best practices in cooperation with international regulators and guidelines issued by organizations such as the Financial Services Commission (FATF). Established compliance ensures consistency and fairness in cross-border transactions and investments. This international conference underscores Qatar's commitment to tackling illegal activities in the cryptocurrency market and strengthens its position in the global economy.

6) *Lessons from GCC Neighbors:* Drawing insights from neighboring countries in the Gulf Cooperation Council (GCC), Qatar has been exploring the legal path adopted by Bahrain and the United Arab Emirates (UAE). Bahrain and the UAE have extensive licensing policies and strict

economic internal security measures; with robust legal oversight, cybersecurity measures are also being implemented to balance innovation. Qatar aims to incorporate these successful practices with the program, using local experiences to strengthen its regulatory environment for cryptocurrencies.

7) *Adaptability and Future Prospects:* Qatar's proposed regulatory framework recognizes the strengths of cryptocurrencies and anticipates continued developments in blockchain technology and global regulatory standards. Built-in strategies for continuous review and innovation ensure flexibility to adapt to emerging trends and technological developments. This flexibility allows Qatar to take advantage of cryptocurrencies' potential benefits, attract investment, foster innovation in financial technology, and maintain regulatory effectiveness over time.

8) *Challenges and Implementation:* Implementing a comprehensive cryptocurrency framework in Qatar will demand substantial effort and resources. Key priorities include investing in technological infrastructure for research and regulation, enhancing the capacity of regulators and legislators, and fostering collaboration among government agencies, financial institutions, technology companies, and international partners to promote public education. Qatar aims to adopt a balanced regulatory approach that embraces innovation while ensuring legal oversight and consumer protection, setting a benchmark for responsible cryptocurrency regulation. This will involve clearly defining cryptocurrency, enforcing stricter licensing requirements, improving Anti-Money Laundering (AML) and Counter-Terrorism Financing (CTF) processes, and prioritizing consumer protection and education.

VI. DISCUSSIONS

Religious and cultural beliefs are crucial in shaping the acceptance and regulation of cryptocurrencies in Qatar. Survey data reveal a cautious outlook towards cryptocurrencies, influenced by concerns regarding compliance with Shariah principles. This aligns with existing literature in Islamic finance, where some scholars view cryptocurrencies as permissible due to their speculative nature, while others advocate for strict regulation to establish legitimacy. Economic development goals, financial stability, and technological readiness have shaped Qatar's legal framework. Survey responses indicate a neutral to slightly positive sentiment regarding regulatory changes, reflecting a careful approach to potential shifts consistent with broader GCC strategies to reduce reliance on hydrocarbons.

The importance of stakeholder engagement is emphasized in balancing innovation with risk management. Blockchain technology is recognized for its potential to enhance efficiency and transparency in trade finance and supply chain management, particularly for Small and Medium-

sized Enterprises (SMEs). However, concerns regarding budget readiness persist. Literature supports the notion that blockchain can democratize financial services for small businesses. Qatar's regulatory approach towards cryptocurrencies is primarily determined by good governance and economic openness, with survey results indicating a neutral attitude towards institutional readiness. This underscores the necessity for improved mechanisms to facilitate integration. Islamic financial institutions in Qatar are positioned to incorporate cryptocurrencies while ensuring adherence to Shariah principles and addressing security concerns. The survey data reflect a cautious yet optimistic perspective on this integration, highlighting the significance of Shariah-compliant policies for promoting financial inclusion and transparency.

VII. CONCLUSION AND FUTURE WORK

This study explores the increasing adoption of cryptocurrency in Qatar while ensuring compliance with Shariah legal and regulatory standards. It addresses the concerns of Islamic scholars regarding uncertainty (Gharar), moneylending (Riba), and abuse. The research suggested methods through a literature review and a comprehensive analysis, including creating hard currency with assets you can see. Another idea was to support or establish a Central Banking Digital Currency (CBDC) in line with Islamic financial principles. The paper proposes a tailored regulatory framework for Qatar, covering Legal interpretation, Licensing mechanisms, Anti-Money Laundering measures, Consumer protection, Traditional banking integration, international compliance, and Periodic reviews aimed at reducing transaction risks.

This framework will provide clarity for businesses and investors. It will also ensure security and stability, encouraging cryptocurrency's complementary use. This study contributes insights to policymakers and stakeholders in navigating the complexities of cryptocurrency adoption, guiding informed decision-making and policymaking. It aims to balance innovation and strong governance, positioning Qatar to lead the burgeoning fintech scene and ensure financial stability by upholding Shariah principles. We plan to conduct further research based on this study by adding more crucial factors, such as demographic details of the respondents, and applying more rigorous statistical analysis with many samples to clarify the study.

REFERENCES

- [1] A. Alomari and N. Fetais, "Blockchain Technology Adoption in the State of Qatar: Qualitative Risk Analysis," Qatar University Press, 2023.
- [2] A. Dahdal, J. Truby, and H. Botosh, "Trade Finance in Qatar: Blockchain and Economic Diversification," *Law and Financial Markets Review*, vol. 14, no. 4, pp. 223-236, 2020.
- [3] A. Eaddy, "Innovation in Terrorist Financing: Interrogating Varying Levels of Cryptocurrency Adoption in al-Qaeda, Hezbollah, and the Islamic State," Doctoral dissertation, Tri-College Libraries, 2019.
- [4] A. M. Z. Othman and E. M. E. Dosh, "Regulating Digital Currencies in the Emirate of Dubai: A Comparative Legislative Review," *International Journal of Public Law and Policy*, vol. 10, no. 2, pp. 204-225, 2024.
- [5] B. Ammy, A. Soemitra, and Z. M. Nawawi, "Investing in Cryptocurrency Through the Lens of Islamic Economics," *Proceeding Medan International Conference on Economic and Business*, pp. 227-243, 2023.
- [6] B. Najafi, M. Amra, and A. Najafi, "Exploring Global Fintech Advancement and Application: Case of Saudi Arabia, Turkey, and Qatar," in *Exploring Global FinTech Advancement and Applications*, IGI Global, pp. 158-211, 2024.
- [7] H. Botosh, "Trade Finance in Qatar: Blockchain and Economic Diversification," 2020.
- [8] I. A. Ibrahim and J. Truby, "Governance in the Era of Blockchain Technology in Qatar: A Roadmap and a Manual for Trade Finance," *Journal of Banking Regulation*, pp. 1-20, 2021.
- [9] L. Charfeddine and M. Umlai, "Blockchain-based Supply Chain Financing Solutions for Qatar," DOI:10.13140/RG.2.2.18262.27206, 2021.
- [10] L. Safina and U. A. Oseni, "Utilizing Blockchain Technology for Post-Trade Securities Settlement: A Framework for Islamic Capital Markets in the GCC Region," in *Fintech, Digital Currency and the Future of Islamic Finance: Strategic, Regulatory and Adoption Issues in the Gulf Cooperation Council*, pp. 187-207, 2021.
- [11] M. M. Abdeldayem and S. H. Aldulaimi, "Cryptocurrency in the GCC Economy," *International Journal of Scientific and Technology Research*, vol. 9, no. 2, pp. 1739-1755, 2020.
- [12] M. M. Babu, T. Bason, R. Porreca, P. Petratos, and S. Akter, "Fostering Trust and Overcoming Psychological Resistance Towards Cryptocurrencies and Cryptoassets," *Psychology & Marketing*, vol. 41, no. 1, pp. 45-68, 2024.
- [13] N. J. N. AlNasr, "Adopting Fintech: The Fintech Ecosystem in Qatar with a Comparison to Other Emerging Markets," Doctoral dissertation, Hamad Bin Khalifa University, Qatar, 2022.
- [14] N. M. A. Jaradt and H. A. M. B. Issa, "Electronic Money System and its Importance in Electronic Payment: Comparative Analysis of Bahrain and UK Laws," *Test Engineering and Management*, vol. 83, pp. 856-861, 2020.
- [15] S. Khan and M. R. Rabbani, "In-depth Analysis of the Blockchain, Cryptocurrency, and Sharia Compliance," *International Journal of Business Innovation and Research*, vol. 29, no. 1, pp. 1-15, 2022.
- [16] J. Turby, A. M. Dahdal, and O. Caudevilla, "Global Blockchain-based Trade Finance Solutions: Analysis of Governance Models and Impact on Local Laws in Six Jurisdictions," *Global Journal of Comparative Law*, 11, p. 167-196, 2022.
- [17] W. George and T. Al-Ansari, "Roadmap for National Adoption of Blockchain Technology Towards Securing the Food System of Qatar," *Sustainability*, vol. 16, no. 7, p. 2956, 2024.
- [18] Y. C. Yeong, K. S. Kalid, K. S. Savita, M. N. Ahmad, and M. Zaffar, "Sustainable Cryptocurrency Adoption Assessment Among IT Enthusiasts and Cryptocurrency Social Communities," *Sustainable Energy Technologies and Assessments*, vol. 52, p. 102085, 2022.