Qualitative Research in Financial Markets

Empirical validation of a framework for Fiqh analysis of crypto assets

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Abstract

Purpose – This study aims to empirically validate a conceptual framework for evaluating crypto assets, specifically addressing their multifaceted challenges concerning Sharī‘ah compliance. The research provides insights into the framework's applicability and effectiveness in assessing maturity, risk and compliance in the evolving digital economy landscape.

Design/methodology/approach – A qualitative research approach was used, utilizing semi-structured interviews with experts in the field. The collected data were analyzed to assess expert perspectives on the conceptual framework developed by Mohammed et al. (2024), highlighting its strengths, limitations and practical applications.

Findings – The experts recognized the framework's potential to provide a systematic methodology for evaluating crypto assets and to address Sharī‘ah compliance complexities. Their insights were instrumental in optimizing and refining the framework, enhancing its robustness and applicability. Nevertheless, they also identified challenges such as resistance to early adoption, limitations in real-world application and the need for institutional and multidisciplinary support. The findings highlight the importance of independent and well-informed juristic rulings, regulatory oversight and integration into institutional and policy structures to enable effective adoption and long-term sustainability.

Originality/value – This study contributes to establishing a standardized approach for evaluating Sharī‘ah compliance of crypto assets. The research offers a foundational tool for jurists, institutions and policymakers to address evolving demands in the crypto asset landscape. Future studies could focus on real-world application of the refined framework and assess its viability in keeping pace with the dynamic nature of crypto assets.

Keywords Crypto assets, Framework refinement, Sharī‘ah compliance, Risk analysis, Digital economy, Islamic finance

Paper type Research paper

1. Introduction

Since their emergence, cryptocurrencies have been lauded for their ability to facilitate faster, more secure and cost-efficient financial transactions (Maghdeed, 2020). However, despite these advantages, their acceptance by public institutions and governments was initially marked by skepticism. The reluctance by these institutions was not unfounded, as the disruptive potential of cryptocurrencies posed a direct challenge to the traditional financial system. The nature of digital assets, which operate outside centralized control, fueled concerns among established financial institutions, which viewed them as a threat to existing regulatory frameworks.

Nonetheless, the rapid proliferation of cryptocurrencies over the past decade has led to a paradigm shift in approaching them, whereby many jurisdictions have begun to integrate

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them into their legal and financial systems. In 2013, the Financial Crimes Enforcement Network (FinCEN) issued guidance that recognized "convertible" virtual currencies as assets with equivalent value to real currency or as its substitute (FinCEN, 2013). Similarly, the Internal Revenue Service (IRS) has classified virtual currencies as property, thereby subjecting them to capital gains taxes and aligning them with traditional financial assets in terms of tax liability (IRS, 2014).

Comparable regulatory developments can be observed in other countries. In Canada, the Canada Revenue Agency (CRA) mandates that businesses report any income or capital gains resulting from the disposition of cryptocurrencies (CRA, 2023). This aligns with the regulatory approach taken by the Australian Taxation Office (ATO), which has extended capital gains tax rules to cryptocurrency transactions (ATO, 2023). These moves represent not just a grudging acceptance of crypto assets, but an active effort by governments to integrate them into the broader economic landscape through regulation and taxation. In Europe, regulatory responses have been similarly progressive. The European Banking Authority (EBA) has called for the adoption of a phased regulatory framework for cryptocurrencies, signaling a move away from initial concerns about their legitimacy (Al-Maknouzi, 2019).

Meanwhile, on the African continent, the regulatory landscape has taken a different trajectory. The Central African Republic, following in the footsteps of El Salvador, became the second country to adopt Bitcoin as legal tender (Browne, 2022). This bold move signals a radical divergence from more cautious regulatory approaches, illustrating the diverse ways in which nations are responding to the growing influence of cryptocurrencies.

While regulatory frameworks around the world are evolving to address the growing presence of cryptocurrencies, significant challenges remain, particularly the definitional ambiguity of these digital assets. The term "cryptocurrencies" itself has come under scrutiny, as many of these assets do not serve the conventional functions of money. As a result, there has been a shift toward using the term "crypto assets" to capture the broader array of functionalities that these innovations represent, which extends beyond the simplistic notion of currency. Henceforth, the term "crypto asset" will be used throughout this paper unless a specific reference is made to a cryptocurrency.

The definitional and regulatory challenges are further compounded in Islamic finance, where no clear Fiqh stance has been established on the legality of crypto assets, as reflected in the closing statement by the International Islamic Fiqh Academy (IIFA) in its resolution no. 237 (24/8) (Closing Statement of Digital Crypto-Currencies Symposium, 2021). While the Malaysian Securities Commission (SC) recognizes crypto assets within specific conditions (Shariah Advisory Council, 2023; Wahab *et al.*, 2024), other state fatwa committees in Malaysia have yet to issue Fiqh opinions (Wahab *et al.*, 2024). Major standard-setting bodies, such as the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI), have also not issued formal guidance on how these assets should be regulated under Sharī'ah law. This lack of clarity stems from both disagreements among Islamic jurists over how to categorize crypto assets and a limited understanding of the underlying technologies. The technical complexity inherent in blockchain and related innovations has exacerbated these debates, resulting in a protracted discourse that has yet to yield a consensus. Thus, while countries like the USA and European nations are moving towards regulatory clarity, other regions and sectors, such as Islamic finance, face unique and ongoing challenges in adapting to this rapidly evolving landscape.

A close examination of the methodologies used by Islamic jurists to assess crypto assets reveals that their approach has often been narrow, primarily viewing these digital assets from the perspective of fiat currencies. This has led to an incomplete and fragmented risk analysis,

with risks frequently conflated with Gharar. The absence of a comprehensive framework for guiding Fiqh rulings on crypto assets has further complicated the discourse. Recognizing these gaps, Mohammed *et al.* (2024) proposed a conceptual framework that offers a more structured approach to Fiqh analysis, incorporating technical and market benchmarks to facilitate an in-depth understanding of crypto-related risks. However, this framework remains largely theoretical and unvalidated. Building on this work, the present study seeks to optimize Mohammed *et al.*'s (2024) model, to provide a validated framework that can effectively guide Fiqh rulings on crypto assets. The study also seeks to examine the issues that have led to disjointed understanding of crypto assets from a Fiqh perspective, as well as to examine the extent to which the current practices have addressed these challenges.

The article proceeds as follows. Section 2 critically reviews literature on regulatory, definitional, and jurisprudential challenges of crypto assets. Section 3 outlines the methodology for refining and validating Mohammed *et al.*'s (2024) framework. Section 4 presents the findings and analysis, and the final section concludes, highlights key contributions, discusses implications for regulators and scholars, and identifies directions for future research.

2. Review of related literature

The terminology surrounding cryptocurrencies remains inconsistent, with phrases such as "digital currency," "digital money" and "electronic money" often used interchangeably despite referring to distinct concepts. Cryptocurrencies, however, represent a specific subset of crypto assets, and ambiguity persists about their definition and classification (Abu Layl, 2019; Bu Abdaly and Saeed, 2019; Dahshan, 2019; Al-Jumayli, 2019a, 2019b; Smiran, 2019). According to Hrabčák and Štrkolec (2024), the definition of crypto assets provided by the Markets in Crypto-Assets Regulation (MiCA) of the European Union (EU) seems to be legally vague and ambiguous and does not cover all current crypto assets. While the regulatory framework in the UK offers a clear distinction between different types of crypto assets, Germany's technology-neutral standpoint towards various crypto assets introduces challenges in differentiating between them, potentially giving rise to ambiguity (Wronka, 2024).

An implication of this vagueness is the question of whether crypto assets, especially cryptocurrencies, qualify as money. This remains a contentious issue across disciplines, including economics, law and Islamic jurisprudence. In China, for instance, Bitcoin is not recognized as a fiat currency due to its decentralized nature (El Islamy, 2021), while debates continue over its legal status and whether it meets the criteria of money, such as serving as a medium of exchange (Al-Shummari, 2019; Al-Jumayli, 2019a, 2019b; Mabout, 2019; Al-Jumayli, 2019a, 2019b; Oudah, 2019; Samai, 2019).

In Islamic finance, views on crypto assets are similarly divided. While some scholars argue that crypto assets fail to meet essential criteria for Sharī'ah compliance due to issues like volatility and the absence of an issuing authority (Abu Ain, 2019; Al-Samirrai, 2019; IFSB, 2024), others contend that such characteristics do not necessarily disqualify them from serving as legitimate units of account (Al-Yahya, 2019, p. 236). For instance, in his study, Mohd Noh (2022) concludes that volatility and speculation are not inherent features of cryptocurrencies but stem from external factors such as market conditions and other variables. Conversely, Khan, Saeed-ur-Rahman and Bilal (2024) maintain that, from the Hanafi perspective, cryptocurrencies lack intrinsic worth and stability because they depend solely on speculative market confidence. This aligns with Wandri *et al.* (2023), who argue that crypto assets do not qualify as legitimate investment instruments. Nonetheless, they maintain that Islamic law does not prohibit their use as a medium of exchange for facilitating

payments and delivery. The absence of formal guidance from major Islamic financial bodies, such as the AAOIFI, has left these debates unresolved. In addition, except for the SC, no Malaysian state fatwa committees has provided Fiqh opinions on crypto assets or their recognition (Wahab *et al*., 2024).

Many early studies on crypto assets, particularly Bitcoin, have been limited by technical inaccuracies. Misunderstandings surrounding the technology, such as the mechanisms of crypto asset mining or the anonymity of users, have led to oversimplified assessments and, in some cases, misguided conclusions regarding their permissibility under Sharī'ah law (Abu Layl, 2019; Smiran, 2019). Such gaps have contributed to a lack of clarity in determining crypto assets' Sharī'ah compliance (IFSB, 2024) leading to inconsistent legal and financial interpretations.

The risks associated with crypto assets is another area of concern frequently discussed in the literature. The primary risks identified include regulatory uncertainty, price volatility, and the absence of a central issuing authority (Al-Shummari, 2019, p. 51; Mabout, 2019, p. 371; Oudah, 2019, p. 193; Samai, 2019, p. 157). However, recent shifts in regulatory focus, such as the EBA's call for a redefinition of the legal nature of cryptocurrencies, suggest that the debate is moving beyond issues of legitimacy to questions of classification and oversight (Al-Maknouzi, 2019).

While much of the literature has focused on Bitcoin, the diversity of crypto assets has been underexplored. Studies often generalize findings from Bitcoin to the broader category of crypto assets, overlooking the unique characteristics of different tokens. This highlights the need for more in-depth analysis that considers each crypto asset based on its specific properties and underlying technologies. More recently, Islamic scholars have begun to exhibit a more detailed appreciation of Bitcoin and its distinction from other crypto assets. However, this understanding often remains based on a high-level abstraction, which can lead to misconceptions and unsupported claims. According to Mashal (2022), there is still a lack of systematic discourse on crypto assets among Muslim jurist in forums and conferences. The rapid emergence of new technologies like blockchain, proof-of-stake (PoS), agency mining and non-fungible tokens has only compounded the complexity of the debate, with Islamic jurists struggling to adapt due to an absence of a modern analytical framework that aligns with Fiqh principles. The Islamic Financial Services Board maintains:

> There are discrepancies in how these assets are defined and classified, and the extent to which they are considered Sharīʿah-compliant. The lack of a standardised framework for categorising these assets has led to varying interpretations among scholars and financial institutions." (IFSB, 2024).

In response to this gap, Mohammed *et al*. (2024) have developed a conceptual framework aimed at guiding Islamic scholars in their evaluation of various crypto assets. This guiding framework, shown in Figure 1, suggests subjecting a crypto asset under examination to several process filters. The first filter assesses the developmental maturity of the crypto asset under study. To conduct such an assessment, the authors advocate the use of several indicators that consolidate insights from market and technical experts, some of which are borrowed from the research of Bakr (2023); refer to Table 1.

If the initial assessment indicates the need for further investigation into developmental maturity, the crypto asset proceeds to evaluation of its issuing authority. Next, the risk severity of the asset's issues is assessed, beginning with the determination of impact and probability levels (Table 2), followed by the establishment of risk severity levels (Table 3). These results then inform the evaluation of Sharī'ah compliance. The final step involves assessing the crypto asset's exogenous components.

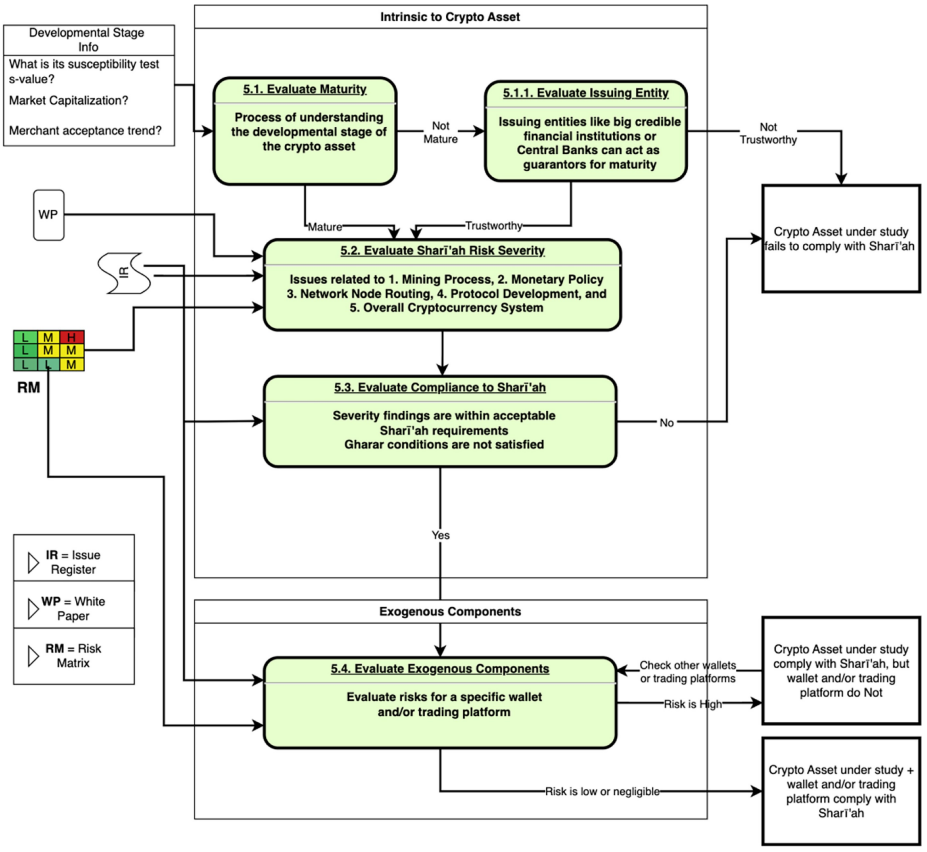

Figure 1. The proposed fiqh guiding framework
Source: Mohammed *et al.* (2024)

While Mohammed *et al.* (2024) have put great effort to detail the assessment criteria for each process, their framework remains theoretical and unvalidated. Their study already provides substantive Sharīʿah discussions on issues such as Gharar, Ribā and gambling. By contrast, the objective of the present study is not to re-examine these doctrinal debates in depth, but to validate and refine the framework itself through expert input. References to Sharīʿah issues in this paper—such as the permissibility of spot trading and the impermissibility of futures or derivatives – are therefore included only to illustrate and test missing cases (e.g. exchange platforms) within the framework, rather than to adjudicate the jurisprudential details already addressed by Mohammed *et al.* (2024).

3. Methodology

3.1 Research design

This study has used a qualitative research approach using semi-structured interviews to validate Mohammed *et al.*'s (2024) proposed framework and examine key issues related to the framework. As recommended by Miles and Huberman (1994), qualitative methods are

Table 1. Criteria for maturity

Criterion Category	Mature	Further scrutiny	Rejected
PoW			
Market cap	≥ 10bn	≥ $1bn and < $10bn	< $1bn
s-value *	< 0.532	≥ 0.532 and < 0.826	≥ 0.826
Merchant acceptance trend	Increasing	Increase is not obvious	Acceptance not established
PoS			
Market cap	≥ $10bn	≥ $1bn and < $10bn	< $1bn
Largest stake	≪50%	≈ < 50%	≥ 50%
Merchant acceptance trend	Increasing	Increase is not obvious	Acceptance not established
Smart contracts			
PoS criteria satisfied	Yes	See PoS	None is satisfied
Access controls	Recommended	Satisfied	
require() assert() revert()**	Recommended	Satisfied	
Formal verification	Recommended	Maybe	
External audit	Must	Not Satisfied	
Stablecoin			
Market cap	≥ $10bn	≥ $1bn and < $10bn	< $1bn
Full public audits	Satisfied	Partial	No
Track-record of peg stability	Yes	No	No
Reserves are established	Yes	Not clear	No
Merchant acceptance trend	Increasing	Increase is not obvious	Acceptance not established

Note(s): *s-value = susceptibility test value – a mathematical formula supported by statistical rigor to test PoW resilience against attacks: Bakr (2023) – https://www.researchsquare.com/article/rs-3013756/v1;** These are code specifics that ensure security of smart contracts
Source(s): (Mohammed *et al.* 2024)

Table 2. Interpretations for different impact and probability levels

Level	Weight	Interpretation
Impact		
Negligible	1	No real effects on the transacting user
Minor	2	Causes minor frustration for the user due to the temporary inability to access or transact
Marginal	3	Causes minor loss of wealth for the user and/or difficulty of transacting causes inconvenience
Significant	4	The transacting user faces considerable loss of wealth and/or barely is able to transact
Critical	5	The transacting user faces significant loss of wealth and/or significant loss of access
Probability		
Highly Improbable	1	Probability of the issue's occurrence is significantly negligible, impossible, or highly unlikely
Improbable	2	The occurrence of the issue is unlikely but may happen occasionally
Possible	3	50-50 chance for the issue to occur. Can sometimes happen
Probable	4	The issue is very likely to occur. Occurs frequently
Certain	5	The issue is highly likely to occur. Almost always occurs

Source(s): Mohammed *et al.* (2024)

Table 3. Risk levels and corresponding severity range

Level	Severity range
Low	Level < 6
Medium	$6 \leq$ level < 12
High	$12 \leq$ level < 18
Very High	Level ≥ 18

Source(s): Mohammed *et al.* (2024)

highly effective for investigating new areas of inquiry. The use of semi-structured interviews enabled a conversational dynamic, allowing participants to express their views freely and examine critical aspects of the subject (Longhurst, 2016). Given the absence of a comprehensive Fiqh framework in the literature for analyzing crypto assets, this study adopts an exploratory approach, in line with Neuman's (2014) definition of exploratory research, which aims to investigate poorly understood phenomena and generate preliminary insights. Qualitative methods, as noted by Creswell (2009), are particularly suited to the exploration of researcher-designed frameworks, fostering creativity and innovation. This allows for the flexible use of data collection techniques, including formal interviews and informal discussions.

3.2 Sampling technique

Graneheim *et al.* (2017) highlight the importance of ensuring credibility by engaging participants who possess relevant expertise and experience in the phenomenon under investigation. Therefore, experts with specialized knowledge in Islamic jurisprudence, Fiqh,

related to commercial transactions and a deep understanding of cryptocurrency issues were purposefully selected. As Sandelowski (1998) notes, such participants are chosen based on their "substantive area expertise" reflecting their command of the relevant knowledge field. Their inclusion was critical for member validation, allowing their insights to corroborate the accuracy of the data and interpretations.

To achieve comprehensive and representative validation, a purposive sampling strategy, supplemented by snowball sampling, was used. Purposive sampling is particularly suitable for exploratory research, as it allows for the deliberate selection of key informants whose experiences provide in-depth insights (Neuman, 2014). In this study, snowball sampling facilitated access to experts within a closely interconnected network, proving especially valuable for identifying individuals with expertise in both traditional Fiqh and contemporary issues related to crypto assets. Nineteen experts were identified through the Islamic Economics Forum (IEF) or by referral, and ten agreed to participate. However, one expert withdrew due to unforeseen circumstances, resulting in a final sample of nine participants.

Table 4 outlines the interviewees' profiles, categorized by qualification, profession and institution. Experts are coded sequentially as E1 through E9. All participants were male,

Table 4. Participants' profiles

Code	Qualification	Profession	Institution
E1	PhD, *Fiqh* (Comparative)	Founder and CEO	Crypto Halal
E2	PhD, Islamic Finance	Senior Advisor	Islamic Finance Initiation Network (IFIN) Services
		Director, Operations	Islamic Finance Advisory and Assurance Services
E3	Master's, Islamic Banking and Finance	CEO	Olive Investments
		Director	Australian Center for Islamic Finance (AUSCIF)
		Member of Working Group	AAOIFI
E4	PhD, Islamic Finance	Assistant Professor	Sakarya University
		Editor	Hamdard Islamicus
		Sharī'ah Board Member	Tayyib Advisory
		Consultant	iFINTELL Ltd.
E5	PhD, Islamic Finance	Cofounder	Alif Technologies
		Strategic Advisor	VePay
		International Chapter Committee Member	Chartered Institute of Islamic Finance (CIIF)
E6	PhD, Business Administration	Assistant Professor (Part-time)	The Arab Academy for Management, Banking, and Financial Sciences
		Member of National Authority for *Sharī'ah* Control	Central Bank of Djibouti
E7	PhD Monetary Economics	Energy Trading and Senior Business Analyst	STX Group
E8	PhD, *Fiqh* and Principles of *Fiqh*	Member	Association of Palestinian Scholars
		Editorial Manager	Mirqah (Journal)
		Former Imam and Preacher	Gaza Ministry of Religious Affairs
E9	PhD, Islamic Law	Associate Professor	INCEIF University
		Director of Research Development and Innovation	International Shari'ah Research Academy (ISRA)
		Independent Board Member	Affin Islamic Bank
		Sharī'ah Member	Central Bank of Oman

Source(s): Authors' own work

which aligns with the male dominance in Fiqh-related cryptocurrency studies. Eight of the nine experts hold PhDs – three in Islamic Finance, two in Islamic Jurisprudence, one in Islamic Law, one in monetary economics and one in business administration. The remaining expert has a master's in Islamic Banking and Finance.

Over 30% of the experts are university-affiliated academics, with at least 20% engaged in lecturing or training, indicating that more than half are involved in academia. In addition, more than 20% serve on Sharī'ah boards at central banks, including those of Djibouti and Oman. Over half hold senior roles in institutions such as ISRA, with two as CEOs, and many are board members in Islamic finance standard-setting bodies like AAOIFI. Two experts hold editorial roles in peer-reviewed journals, reinforcing their academic commitment. The sample reflects strong expertise across disciplines – Islamic finance, jurisprudence, law, monetary economics and business administration – providing diverse perspectives beneficial for this study. The predominance of academics (over 50%) and Sharī'ah board members (over 20%) at central banks adds scholarly depth and practical insight. Collectively, the experts' roles in research, fatwa issuance, consulting and Islamic economic forums establish a solid foundation for data reliability and research validity (Graneheim *et al.*, 2017).

The sample size aligns with Creswell's (2014) recommendations for phenomenological research, which typically involves three to ten participants. Thematic analysis was employed for data analysis, which is particularly suited to phenomenological studies, as it focuses on the subjective experiences and perceptions of participants (Guest *et al.*, 2012; Chang and Wang, 2021). With nine participants, the sample size was sufficient for achieving data saturation, ensuring an in-depth exploration of the research topic. This approach is consistent with qualitative research's emphasis on depth of understanding over larger sample sizes (Boddy, 2016). It is noteworthy that qualitative research can yield significant insights even from a single participant (Boddy, 2016). This sampling technique ensured that the panel of experts could critically assess the proposed framework from multiple perspectives.

3.3 Data collection

Data collection was carried out through individual semi-structured interviews, which facilitated in-depth discussions and elicited meticulous insights. Pre-prepared interview guides were used to maintain consistency and focus, while also familiarizing the experts with the proposed framework in advance. Interviews were conducted either face-to-face or via virtual platforms, such as video conferencing, offering flexibility and increasing accessibility for participants. In-person interviews were audio-recorded, while virtual sessions were both audio and video-recorded, aiding participation and overcoming geographic constraints.

Experts were initially contacted via WhatsApp, provided with an explanation of the study, a brief overview of the framework and a set of guiding questions. This served as an ice-breaker, laying the groundwork for the interviews. Arrangements for time and location followed. Each interview lasted an average of 1 h and 43 min, totaling 15 h and 24 min of interviewing time. The first few minutes of each session were used to welcome the participants and introduce the framework. Experts were encouraged to offer critical feedback and suggestions to identify areas for refining the framework. Minimal interviewer interference reduced the risk of bias, allowing participants' thoughts to flow naturally. In cases where misunderstandings arose, additional sessions were held to clarify aspects of the framework. Two participants, after these clarifications, opted to provide their responses in writing.

The interview questionnaire consisted solely of open-ended questions, allowing participants freedom in their responses (Neuman, 2014). Topics addressed included technical ambiguities surrounding crypto assets, the adequacy of the existing Fiqh framework, the

validity and challenges of the proposed framework, and its potential implementation. The questions were validated by two experts in Islamic economics and finance, ensuring alignment with the study's objectives. This aligns with Sandelowski's (1998) assertion that "outsider-experts can help researchers ask better questions of their data and lead them to new ways of analyzing it."

3.4 Data analysis

Nowell *et al.* (2017) quoted that thematic analysis is a highly flexible approach providing a rich and detailed, yet complex account of data. The objective of this analysis is to traverse the different perspectives of the participants and gain insights. Thematic analysis proves to be a valuable approach for scrutinizing the viewpoints of diverse participants, elucidating both commonalities and distinctions, and uncovering unexpected insights, all the while summarizing essential features within an extensive data set (Nowell *et al.*, 2017). Therefore, the collected data were analyzed using a thematic analysis approach. Due to the exploratory nature of the study, the coding and thematic development unfolded from the data content itself. Thematic development followed the six phases of thematic analysis proposed by Braun and Clarke (2006). The first phase discusses the notion of becoming familiar with the data. To do this, the audio/video recordings were transcribed using a tool powered by artificial intelligence (AI) from Riverside [1]. These transcripts were meticulously reviewed against the recordings, line by line and word by word, and the errors were corrected to ensure reliability and accuracy in line with the proofreading checks suggested by McLellan *et al.* (2003). In the interim, the researchers took notes of interesting data and emphasis made by the participants. It is worth noting that there exist two primary methods for transcribing data: naturalism, which entails capturing every utterance in meticulous detail, and denaturalism, which involves correcting grammar, eliminating interview noise such as pauses and stutters, and standardizing non-majority accents (Oliver *et al.*, 2005).

Naturalism approach is often used by researchers who are interested in conversational studies where every detail is deemed valuable. However, Oliver *et al.* (2005) proposes an approach to transcription that is denaturalized, catering to researchers who prioritize the informational content of speech. This paper is interested in the experiences and opinions of the participants and in the informational content provided by them more than the intricacies of their language and linguistics. As such, this study was more inclined to a denatural approach and, therefore, on reviewing the transcripts this was taken into consideration.

The second phase of thematic analysis is to generate the initial codes. This study partially followed the recommendation by Guest *et al.* (2012) to "winnow" the data before coding. Therefore, the transcripts were reduced to only code the relevant data while the highly irrelevant were disregarded. Some non-conspicuous irrelevant data became only notable after the theme development phase, at which stage they were omitted. This approach also followed from the denaturalism mode employed in transcription. NVivo software was used to carry out the coding, organizing, and thematizing of the data.

In the third phase, the authors searched for key themes and patterns using the software and noted these down. The fourth phase involved reviewing these themes and refining them while looking at further interconnections among the codes. The themes were then defined in the fifth phase followed by writing them up and presenting them in the sixth phase.

To ensure validity and reliability of the findings the following strategies were undertaken. For verifying and validating the findings, Creswell (2014) recommended the use of multiple approaches including "Use a *rich, thick description* to convey the findings," and "Present *negative* or *discrepant information* that runs counter to the themes." The analysis offered many perspectives about the themes to give a rich, thick description of the findings. Second,

information that contradicts the general perspective of some themes besides evidence of other themes were demonstrated.

To ensure reliability of the findings, transcripts were carefully and thoroughly checked to eliminate any mistakes. For every 10 min of audio/video recording, an average of one hour was spent to ensure accuracy. Moreover, the data was constantly compared with the codes and their definitions to eliminate any shift in the meaning of the codes during the coding process. These approaches go in line with "Check transcripts to make sure that they do not contain obvious mistakes" and "There is not a drift in the definition of codes" approaches listed by Creswell (2014) to ensure consistency and reliability.

4. Findings and analysis

4.1 Data findings

The thematic analysis of interview data identified five primary themes: sources and causes of confusion, adequacy of current juristic frameworks, viability and validity of Mohammed *et al.*'s (2024) framework, implementation dynamics: challenges and opportunities, and optimizing the framework: fiqh and strategic recommendations. Table 5 aligns these themes with the relevant research objectives.

4.1.1 Sources and causes of confusion. The analysis revealed seven primary sources of confusion surrounding crypto asset discourse. Rapid changes in technology emerged as a significant factor, with experts E4 and E6 noting how swiftly evolving technologies outpace juristic assessment. E6 explained, "Conditions evolve […] a new cryptocurrency emerges before the ruling on the existing cryptocurrency stabilizes," while E4 highlighted the challenge this poses for standardizing these assets. In addition, the failure to acknowledge crypto diversity was cited by over half the experts. E1 criticized the tendency to group all digital currencies together, and E7 emphasized the disconnect between performance-focused currencies and those designed for smart contracts. E5 added that many still see all crypto assets as Bitcoin clones, a misconception echoed by E6, who said, "It's not just one currency […] but they are looked upon as one type."

Table 5. Theme – research objective mapping

Theme	Research objective
Sources of and causes of confusion	Examine the issues that led to the incomplete comprehension of the crypto assets from a Fiqh perspective
Adequacy of current juristic frameworks and paradigms	Examine the extent to which the current jurists' practices have addressed these challenges
Viability and validity of Mohammed *et al.*'s (2024) Framework	Validate Mohammed *et al.*'s (2024) model, then refine and optimize it to effectively guide Fiqh rulings on crypto assets
Implementation dynamics: challenges and opportunities	Validate Mohammed *et al.*'s (2024) model, then refine and optimize it to effectively guide Fiqh rulings on crypto assets
Optimizing the framework: fiqh and strategic recommendations	Validate Mohammed *et al.*'s (2024) model, then refine and optimize it to effectively guide Fiqh rulings on crypto assets

Source(s): Authors' own work

The diverse agendas and backgrounds of stakeholders also contribute to confusion, according to E2, E3 and E5. Another E2 observed that biases and unique backgrounds influence stakeholders' views, stating, "Different stakeholders with different agendas […] people are not free from their biases." E3 and E5 noted the added complexity from financial, regulatory, technical and academic perspectives. This variety in viewpoints is compounded by the complexity of the subject matter itself. E7 described cryptocurrencies and blockchain as "inherently complex," and factors such as technological intricacy, limited technical research, and insufficient qualifications further deepen this complexity. E8 emphasized that juristic assessments often lack depth. This is echoed by E1 asserting that many experts approach the topic only superficially.

Terminological inconsistencies emerged as another source of confusion, with experts E2 and E5 advocating for a shift to the term "crypto assets" rather than "cryptocurrencies" to better reflect the field's scope. E2 underscored the need for clear definitions, emphasizing, "Differentiating and defining every and each term" is essential for clarity. Another significant factor is the lack of expertise and access to information. E9 noted a specific knowledge gap among Arabic-speaking jurists, pointing to delays in the OIC's IIFA resolution as an example, while E6 connected the lack of expertise to limited local market access to cryptocurrency resources.

Finally, influences on rulings within the crypto discourse compound these issues, with experts identifying "superficial foundations," "state influence," "media shaping" and "double standards." E1 criticized rulings based on minimal research, noting, "This superficiality necessarily leads to a deviation in the Sharī'ah ruling." E7 highlighted that state policies often shape rulings rather than unbiased reasoning, while E4 and E5 emphasized the media's role in promoting misinformed views. In addition, the comparison between fiat and cryptos sparked contrasting views. Critics argued that price volatility in crypto assets introduces Gharar and thus makes them impermissible. E8 countered, noting that fiat currencies experience similar fluctuations yet remain widely accepted. E7 added that crypto assets should be subject to Gharar rules just as fiat is under Islamic law, while E5 and E2 highlighted hyperinflation in some fiat currencies, arguing that these face comparable issues but receive less scrutiny. This exchange reveals a divided stance on applying Islamic principles consistently across fiat and crypto assets.

4.1.2 Adequacy of current juristic frameworks and paradigms. Thematic analysis revealed seven main factors influencing the adequacy of existing juristic paradigms for crypto assets, highlighting varying expert perspectives. The first, "traditional precedent paradox," was addressed mainly by E8, who criticized jurists' tendency to apply historical conditions for money to modern cryptocurrencies without adapting these conditions to contemporary contexts.

E3 identified "superficial screening: regulatory and financial naivety" among some crypto advisors, who, in E3's view, lack rigor in their evaluations, showing limited depth in technical research and a reliance on superficial foundations. This contrasted with "scholarly disagreement due to technical complexity," which links to the previous subsection's subtheme "the complexity of the subject matter," and which E2 and E4 agreed complicates framework development as the crypto asset landscape evolves swiftly, adding technical barriers for jurists.

For "verification challenges" (absence of regulatory bodies), E4 noted the lack of involvement from major institutions like AAOIFI, while E9 opined that this might be due to crypto assets' complexity, making them difficult to verify accurately. Similarly, "sensitivity, state influence, and framework limitations," which directly links to the "state influence" factor discussed in the previous subsection, were recurrent themes, with nearly half the

experts highlighting political pressures on rulings. E1 critiqued this influence, suggesting some assessments stray from strict Fiqh principles, while E7 cited a "weakness in theorizing" regarding government monopoly over currency issuance.

The experts have two views regarding "divergent views on framework adequacy." Three experts, namely, E7, E8 and E9 argued about the absence of clear and defined frameworks, whereas E1, E5 and E6 believed the Fiqh framework is sufficient but inadequately applied to crypto assets. Finally, E2 raised "framework challenges due to unclear stability criteria" for crypto assets, questioning scholars who cite price stability as grounds for Gharar without a standardized evaluation metric.

4.1.3 Viability and validity of *Mohammed* et al.'s *(2024)* framework. The thematic analysis brings forth five main components essential to assessing the viability and validity of the Mohammed *et al.'s* (2024) framework. In examining the overall view on the sufficiency of the indicators, E9 praised the indicators for their rational basis, emphasizing their role in enhancing stability and reducing risk. E8 agreed on their substantial impact, while E4 argued that these indicators, though helpful, are limited, advocating for additional indicators to capture the technical maturity needed.

For validating developmental stage and cybersecurity indicators, over 75% of the experts, including E1, E3, E5 and E9, weighed in on the criteria's rigor. E5 and E9 suggested more lenient criteria for new startups, arguing strict benchmarks might hinder early-stage projects, with E9 adding, "Even *Fiqh* perspective gives some leniency into the infancy stage." E3, however, disagreed, deeming developmental stage indicators unreliable, as they could be faked. Experts like E7 noted the importance of indicators such as the s-test value for gauging security maturity, though E3 warned that this approach primarily addresses economic rather than sabotage risks. On the merchant acceptance trend, E5 found this metric difficult to gauge, whereas E7 saw currency adoption as measurable by wallet address increases, albeit mainly for payment-based cryptos. E8 recommended separating technical from market efficiency indicators, suggesting that the latter be evaluated more through Maqāṣidi principles, as merchant acceptance may broadly align with Sharī'ah objectives. Diverging opinions emerged on market cap, with E7 and E8 valuing it for stability measures, while E2, E3, E5 and E1 viewed it as easily manipulated. E1 proposed dynamic benchmarks set by institutions to adapt to current conditions, offering a compromise to counter manipulation.

Regarding the largest stake indicator in a PoS setting, E2 expressed general approval but suggested that additional measures could be introduced to better assess control. In contrast, E1 argued that the threshold should be significantly lowered to "a single digit as an upper limit in the hands of a single entity" to significantly reduce risk. He further emphasized that, for a crypto coin, the distribution should be so granular that "fractions of one percent" are spread across thousands of people in different locations worldwide.

On the topic of stablecoins, E2 subtly recommended evaluating them based on the nature of their pegging mechanism, while E3 stressed the importance of conducting audits by recognized, legitimate entities. In contrast, E5 questioned the necessity of such audits, given that stablecoins are already centralized and their issuing entities are subject to evaluation. Regarding smart contracts, E5 acknowledged the relevance of the current criteria but suggested incorporating substrate chains into the evaluation.

In validating the issuing authority criteria, experts debated its relevance. E1 and E5 supported existing criteria as adequate for risk management, aligning with Shariah principles. Conversely, E2 questioned the criteria's utility for decentralized cryptos, recommending this distinction be explicitly stated. E8 and E7 suggested including checks for business legitimacy and auditing with reliable disclosures. E8 stressed using operational

history to assess managerial and technical competence, though E9 warned that track records might not guarantee future trustworthiness.

Validating wallet management and platform criteria generated further insights. E2 advised removing the inheritance criterion, seeing it as a matter for public awareness rather than juristic consideration. E1 emphasized restricting trading activities, particularly derivatives, with E8 and E6 stressing the avoidance of usury. E5 recommended including a safeguard against insider trading.

Finally, experts underscored the role of regulation and dual impact of risk methods for balancing Sharī‘ah objectivity. E2 and E8 supported integrating risk assessment to enhance understanding of currency risks, though E7 warned against confusing risk levels with rulings on permissibility. E1, E4 and E9 agreed that non-prohibited activities could tolerate low to medium risk, yet E8 noted the absence of a Sharī‘ah standard defining acceptable risk, urging careful differentiation based on the endogenous versus exogenous nature of the risks. E7 concluded that although risk methods are valuable, they should not be conflated with the core Sharī‘ah permissibility judgments.

4.1.4 Implementation dynamics: challenges and opportunities. This theme explores experts' views on both the challenges and opportunities Mohammed *et al.*'s (2024) proposed framework presents for stakeholders, when implemented.

Experts identified several challenges, the major of which is the need for a complex, multidisciplinary team and institutional support. E1, E2, E4, E5 and E7 underscored the difficulty in coordinating stakeholders with varied expertise, as highlighted by E5. E2 delved into the struggle to measure speculation, describing efforts that remain inconclusive, while E4 added that differing scholarly interpretations add further complexity. Conversely, E1 argued that practical challenges will become clearer with prolonged engagement in markets, although E4 pointed to the absence of standard-setting bodies like AAOIFI as a substantial barrier. E8 raised a key issue, questioning the framework's implied "regulated threshold for Sharī'ah-compliant risk." He and E7 advised treating risk thresholds as advisory rather than legal mandates. Recognizing the framework's limitations, E1, E5, and E9 noted it lacks a focus on pure Fiqh aspects.

Nonetheless, experts acknowledge the framework's potential to establish a benchmark for Sharī'ah guidance. E1 and E5 emphasized its promise as a reference point for scholars, with E1 further citing its role in fulfilling regulatory needs in digital currency markets. E3 echoed this, advocating for the framework's capacity to protect wealth in Web3, metaverse, and virtual reality (VR) domains. E1 encapsulated this sentiment: "The framework is a step in the right direction […] regulation is essential in this evolving market." E5 added that the framework offers an essential tool to support a standard Sharī'ah perspective on crypto assets. E9 also praised it for providing a comprehensive approach, assisting scholars in evaluating crypto asset practices holistically.

4.1.5 Optimizing the framework: Fiqh and strategic recommendations. The experts identified both Fiqh and technical limitations within the proposed framework and provided strategic improvements. However, this study will first present a few evidence of the Fiqh considerations raised by the experts.

On the Fiqh considerations, E7 stressed that the maturity criteria should not equate to Fiqh legitimacy, with E5 echoing that while maturity metrics are useful, they cannot be the basis for halal or haram rulings. E6 also cautioned that an authority's endorsement of a crypto asset does not automatically imply permissibility. In addition, E5 highlighted the overlooked importance of al-‘urf (custom) and ta‘āmul al-Nās (common practice) in assessing crypto assets.

In addition to these concerns, experts also raised issues related to risk assessment within the framework. E8 succinctly stated that "risks alone are not a sufficient reason to prohibit cryptocurrencies," citing Mudarabah – a high-risk yet legitimate investment tool – as an example, while noting that risk still influences rulings. In the Gharar (uncertainty) discussion, E5 argued that only intrinsic Gharar affects compliance, proposing a fifth condition to differentiate between intrinsic and extrinsic Gharar. E8, however, disagreed with the framing of the existing four conditions, noting that minor Gharar is common and often excused. He illustrated this with the example:

> Most of the devices we purchase are produced by multiple parties whose exact contributions we do not know, and we are unaware of their true lifespan. Nevertheless, we accept buying them, even though not all come with a full guarantee. This is considered forgiven […] Minor or major aspects are determined by common custom.

This demonstrates that minor Gharar is tolerated, provided it does not concern the price, subject matter, or delivery, or lead to disputes whereas substantial Gharar must be avoided. E7 further suggested that Bitcoin and proof-of-work (PoW)-based assets fall under forgivable Gharar.

Building on these observations, the experts provided strategic recommendations for refining Mohammed *et al.*'s (2024) proposed framework. Table 6 consolidates the quick-win recommendations. All suggestions have been incorporated into the refined framework, except for two: E2's recommendation to reduce granularity in risk assessment, which we retained to ensure proper evaluation and management of systemic risks, and E8's recommendation to verify real investment assets, which, though valuable, is impractical to implement.

4.2 Discussion and analysis

This section delves into and analyzes the findings presented in Section 4.1, aiming to achieve two main goals. First, it assesses how well these findings align with the research objectives

Table 6. Strategic recommendations for refining the proposed framework

Expert	Recommendation
E1, E2	The proposed framework should capture the different types of cryptos
E7	Merchant acceptance trend indicator doesn't make sense in non-payment-based crypto assets
E1	Although implicitly mentioned, the proposed framework needs to explicitly show the rejection of usury and gambling
E2	Smart contracts are technically not contracts – this should be made clear
E1	The framework should look at the permissibility of the project, its services, and it's token/coin use cases. This will fix it to show more of the *Fiqh* aspect of it
E7	Platforms dominated by usurious projects or largely based on the usurious lending model are generally prohibited
E7	Platforms where usurious projects are not promoted, then it is advised to have the usurious transactions avoided while the ruling remains dependable on what the original project is about
E8	Segregate between the technical and market indicators
E2	Framework does not need to go to that extent of granularity in risk assessment
E8	Proposed framework should check how much a crypto project possesses real investment assets. The more projects of cryptocurrencies have real investment assets, the more they contribute to building a real economy that achieves the Quranic vision of wealth
E7	Table 2, 'Interpretations for different impact and probability levels', in the proposed framework, should be reconsidered to demonstrate more logical weight allocations. Reevaluate the weightages to derive logical preferences

Source(s): Authors' own work

outlined in Table 5. Second, it seeks to refine Mohammed *et al.*'s (2024) proposed framework, leading to the development of an initial validated version that can be practically applied to analyze various crypto assets from a Fiqh perspective.

4.2.1 Sources of and causes for confusion. The findings of this study confirmed five primary sources of confusion identified in the literature, while also uncovering two new sources – namely, "rapid changes" and "divergent stakeholders' agendas and backgrounds" – not highlighted in previous research. Although the literature does acknowledge confusion arising from the diversity of stakeholder backgrounds, it overlooks the impact of differing stakeholder agendas, which proves to be as significant. Collectively, these sources of confusion align with the four major issues concerning crypto assets discussed in Mohammed *et al.* (2024) first objective: contention over cryptocurrency definitions, limited understanding of technical aspects, misconceptions about equating altcoins with Bitcoin, and cryptocurrency risks.

Terminological inconsistency also emerged as a key factor in this confusion. Experts pointed to the term "cryptocurrency" itself, noting that the suffix "currency" implies a monetary function, which is not universally applicable across all crypto assets. In response, global organizations are increasingly adopting the term "crypto asset" to eliminate the monetary connotation associated with "cryptocurrency."

4.2.2 Adequacy of current juristic frameworks and paradigms. The seven factors identified in this theme reaffirm what is discussed in the literature. In particular, the factor of "superficial screening: regulatory and financial naivety," emphasized by many experts, including jurists, highlights the shallow treatment of the complex concept of crypto assets. Notably, political influence appears to play a significant role in this superficiality, as almost half of the experts pointed out, revealing the inadequacy and dependence that have characterized much of the research in this field.

Although E1, E5 and E6 initially expressed reservations about critiquing the Fiqh framework's handling of crypto assets, they ultimately aligned with other experts in recognizing the triviality that has plagued research in this area. The initial disagreement stemmed from differing interpretations of the term "Fiqh framework" – with some experts hesitant to view it as deficient. However, once clarified that the critique focused on jurists' paradigms and approaches rather than Fiqh itself, all experts reached a consensus, acknowledging the considerable contentions, confusions, misconceptions and misinterpretations prevalent in the literature.

4.2.3 Viability and validity of Mohammed et al.'s *(2024*) framework. Mohammed *et al.*'s (2024) proposed framework received general acceptance from the experts; however, E4 raised concerns about its viability, which is understandable at this early validation stage. This feedback has been taken into account for the framework's optimization, as discussed further in Subsection 4.2.4.

In addition, E5 and E9 expressed concerns about the risk of prematurely excluding early-stage startups, especially for centralized crypto assets and smart contract projects. They observed that while the proposed cybersecurity measures apply broadly to crypto assets with node-based networks and blockchains, some flexibility may be needed. E8, however, underscored the necessity of stringent technical standards, even for projects with dedicated teams, to avoid impermissible Gharar. Nevertheless, the framework includes indicators that can be adjusted to accommodate early startups.

Meanwhile, E3 argued for incorporating additional measures to assess non-economic threats, such as sabotage. Nonetheless, the authors disagree, noting that such assessments are impractical. Similar to how banks establish security protocols that guard against theft but not necessarily sabotage, crypto projects can implement strong security measures without being

expected to address all forms of external attacks. Disaster recovery protocols, however, may provide some degree of resilience.

Following E8's recommendation, technical indicators will be separated from market indicators, removing merchant acceptance trend as a factor. Most experts agreed that market cap lacks relevance and should be excluded. For PoS crypto assets, E1's suggestion will be adopted: security is enhanced if the largest stake remains below 10%, with thousands of other stakes averaging less than 0.1% each. In addition, stablecoins will require separate criteria tailored to their specific peg types. For smart contracts, E5 emphasized including contracts built on substrate chains – blockchains crafted with the open-source substrate framework, which offers tested modules and advanced security controls. From a Maqāṣidi perspective, these contracts can be evaluated through audits by firms like Certik.

Regarding the issuing entity, expert feedback led to three key criteria: technical and managerial capability (demonstrated through operational history), transparency (through regular public financial statements) and audits by reputable firms having public disclosures. As for platform-wallet management, experts agreed that "inheritance" should be viewed as personal responsibility, not part of the framework. For platforms, the framework now suggests: (1) only spot trading is permitted, (2) no futures, derivatives, loans, leverage or usury [are allowed], and (3) insider trading is prohibited.

Finally, risk considerations will be moved from the Fiqh implications and repositioned within the Maqāṣidi side, with low and medium risk deemed acceptable if the subject matter is unrelated to prohibited activities. While high risks are viewed with caution, the framework provides Maqāṣidi guidance rather than strict permissions or prohibitions. Accordingly, instead of being marked as a Fiqh matter, Table 2 risk interpretations will now align with this Maqāṣidi perspective.

4.2.4 Optimizing the framework: Fiqh and strategic recommendations. The findings from earlier analyses are integrated into the proposed framework, now shown in Figure 2.

Key modifications include a clearer division between the Fiqh and Maqāṣidi evaluation sections. Notably, the framework now emphasizes different types of crypto assets: in the "0. Start Here" step, it distinguishes between project-based (centralized) assets and P2P payment-based (decentralized) assets. In addition, step "4. Evaluate Issuing Entity" now includes criteria specific to smart contracts and stablecoins. E1's suggestion was also incorporated, adding step 1 to screen projects, services, and coin/token use cases for Sharī'ah compliance, and step 2 to verify the contract's validity.

Following this, a step-by-step explanation of the framework will guide the evaluation of a given crypto asset. "0. Start Here" serves as an entry point, not a procedural step, indicating one of two paths: "YES" for P2P payment-based assets without a project, and "NO, Project Exists" for project-based assets. Importantly, each step represents a comprehensive process, involving substantial analysis. Hereafter, the term "process" will be used consistently for clarity.

4.2.4.1 Screening project, services and coin/token use cases (process number 4.2.4.1). This process evaluates the crypto project (if applicable), its services, and coin/token use cases for Sharī'ah compliance, ensuring they are free from prohibited activities, such as alcohol sales, usury, gambling, Jahālah and Gharar. Jurists should note two key aspects: first, if some services breach Sharī'ah, permissible services can still be endorsed, while violations are marked as impermissible. Second, special attention must be given to Gharar. According to Ibn al-Qayyim, it is something whose occurrence is unknown, or whose true nature and amount are unknown. In classical jurisprudence, prohibited Gharar refers specifically to ambiguity in the essential elements of a contract – its subject matter, price or delivery – which renders the transaction impermissible. Such substantial Gharar, inherent to the crypto

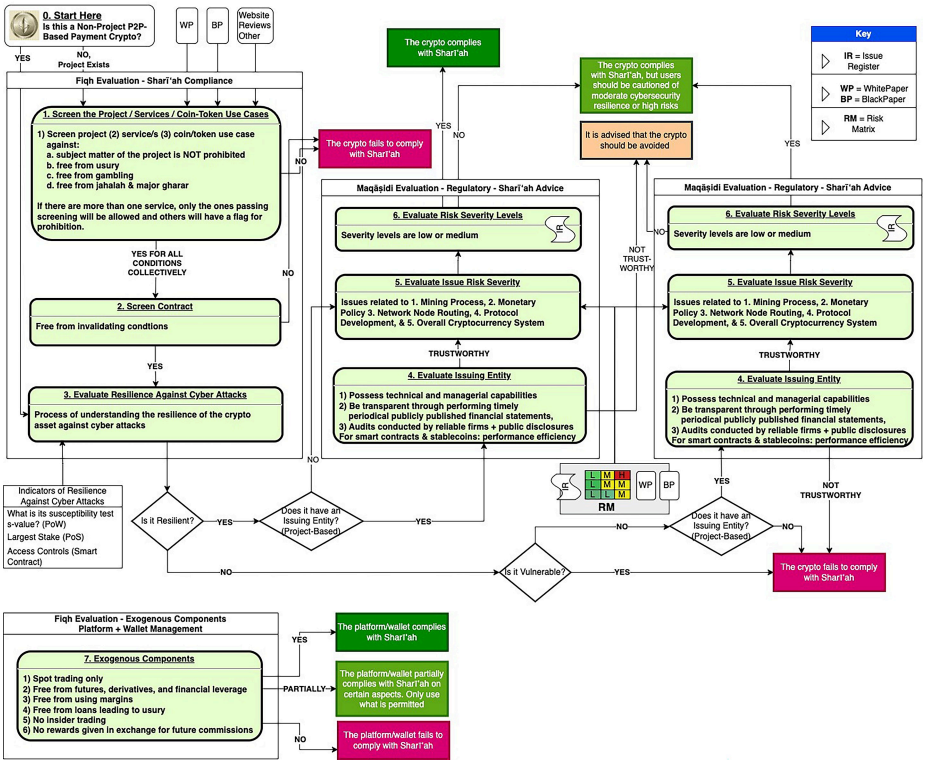

Figure 2. Refined version of Mohammed et al.'s (2024) proposed framework
Source: Authors' own work

asset, as highlighted by experts like E5 and E8, should be avoided. As E8 clarified, no transaction today is entirely free from Gharar; what matters is that it should not be so substantial as to cause disputes or lead to the unlawful consumption of people's wealth. According to E8, minor Gharar – so long as it does not relate to the price, subject matter or delivery – is excused. E7 further noted that PoW falls under forgiven Gharar.

4.2.4.2 Screening the contract (process number 4.2.4.2). In this step, the jurist must verify the contract for any invalidating clauses, such as the absence of immediate possession upon exchange, which Sharī'ah mandates. The contract between the user/client and the crypto project/team must be free of any clauses that could render it non-compliant.

4.2.4.3 Evaluating resilience against cyber-attacks (process number 4.2.4.3). This revised process assesses the crypto asset's resilience against cyber-attacks rather than focusing on "maturity" or "developmental stage," terms that previously caused confusion due to investment connotations. E8 recommended separating technical indicators from market indicators for clarity. Thus, Table 1 is updated to present the revised security resilience indicators and benchmarks in Table 7.

Stablecoins are no longer included here as their indicators pertain solely to the issuing entity, given their centralized nature and dependence on the supporting team. Similarly, PoW and PoS cryptos no longer have additional indicators, as market cap and merchant

Table 7. Revised cybersecurity indicators and benchmarks for resilience

Criterion category	Assessment parameter	Resilient	Further scrutiny	Vulnerable
PoW	S-value *	< 0.532	≥ 0.532 and < 0.826	≥ 0.826
PoS	Largest stake	< 10 %	≥ 10 % and < 20 %	≥ 20 %
	Average stake	< 0.1 %	< 0.2 %	–
Smart Contracts	PoS or PoW criteria satisfied **	Yes	See PoS or PoW	None is Satisfied
	Access controls	Recommended	Satisfied	

Note(s): * s-value = Susceptibility test value; ** only if based on PoS or PoW – If it is based on substrate chain, then this is not required
Source(s): Authors' own work

acceptance were deemed unnecessary. For smart contracts, several indicators have been reassigned to the evaluation of the issuing entity. Nonetheless, their security against cyber-attacks and unauthorized access relies on the underlying PoS or PoW controls, as well as the specific access controls implemented.

If Table 7 shows resilience, the crypto asset proceeds to the next step, either evaluating the issuing entity (for centralized, project-based assets) or assessing risk levels (for decentralized assets without a project team). For non-project-based cryptos that require further scrutiny, a lack of resilience means they are considered non-Sharī'ah compliant; otherwise, they move on to the issuing entity evaluation.

4.2.4.4 Evaluating the issuing entity (process number 4.2.4.4). This process builds on Subsection 4.2.3, adding further conditions for smart contracts, pegged stablecoins, and algorithmic stablecoins in Table 8. Technical indicators like "Require(), assert(), revert()" and "Formal Verification" are reassigned from cybersecurity to issuer's criteria, as they address software reliability rather than direct security threats. Thus, issuers must verify software issues and provide formal proof of reliability. For stablecoins, Table 8 distinguishes pegged from algorithmic types; notably, algorithmic stablecoins do not require the "Track-record of peg stability" indicator, since algorithms stabilize value without asset pegs.

4.2.4.5 Evaluating the issue risk severities (process number 4.2.4.5). While Mohammed *et al.*'s (2024) proposed framework largely retained its original form, some adjustments were

Table 8. Smart contracts and stablecoins (pegged and non-pegged) criteria

Criterion category	Efficient	Not sufficiently efficient	Inefficient
Smart contracts			
Require(), assert(), revert()	Recommended	Satisfied	Not satisfied
Formal verification	Recommended	Maybe	Not satisfied
External audit by reputable auditors	Must	Not satisfied	Not satisfied
Pegged stablecoin			
Full public audits by reputable firms	Satisfied	Partial	No
Track-record of peg stability	Yes	No	No
Reserves transparency	Yes	Not clear	No
Non-pegged * stablecoin			
Full public audits by reputable firms	Satisfied	Partial	No
Reserves transparency	Yes	Not clear	No

Note(s): *Algorithmic stablecoins have no pegs, but stability is achieved algorithmically
Source(s): Authors' own work

recommended. Notably, E7 identified an inconsistency in the weighting of probability and impact, citing an example to illustrate: if a transaction carries a certain likelihood of a marginal loss (probability weight = 5, impact weight = 3), the risk severity is calculated as $5 \times 3 = 15$. Comparatively, if another transaction has a 50% chance of a significant loss (probability weight = 3, impact weight = 5), it also yields a risk severity of $3 \times 5 = 15$. Logically, however, traders are generally more averse to even a moderate chance of a significant loss than to a certain minor one, suggesting that these scenarios should not be rated equally.

This discrepancy, according to E7, arises because "Most traders tend to detest a potential significant loss by 1/2 more than they detest a certain marginal loss." To address this, E7 proposed revised weights: 0.75 for impact and 0.25 for probability. Using these adjusted values, a scenario with a 50% probability (3) of a significant loss (5) results in: $0.25 \times 3 + 0.75 \times 5 = 4.5$. In contrast, a scenario with a certainty (5) of marginal loss (3) yields: $0.25 \times 5 + 0.75 \times 3 = 3.5$. These revised weightings, E7 argues, provide a more rational assessment of risk, necessitating an update to the risk levels as reflected in Table 9.

4.2.4.6 Evaluating risk severity levels (process number 4.2.4.6). In line with the updated weights and levels, the risk levels and their corresponding severity ranges have been revised, as illustrated in Table 10. Other aspects of Mohammed *et al.*'s (2024) proposed framework remain unchanged. Under the new scale, a low-risk level is assigned a severity range below 2.25; medium risk falls between 2.25 (inclusive) and 3.75; high risk is set between 3.75 (inclusive) and 4.75; and very high risk applies to levels of 4.75 and above.

4.2.4.7 Evaluating exogenous components (process number 4.2.4.7). The evaluation of exogenous components remains consistent, with streamlining adjustments from Subsection 4.2.3. Key points include restrictions to spot trading only, and prohibitions on usury and insider trading. This process is now detached from Mohammed *et al.*'s (2024) framework, as the crypto asset itself is separate from exchange platforms or wallets. This separation ensures logical, comprehensive analysis.

5. Conclusion

This study builds on Mohammed *et al.* (2024), which proposed a contemporary jurisprudential framework for analyzing crypto assets. It advances this work by validating the framework and assessing its practical application in navigating the complexities of the crypto asset landscape. Using thematic analysis of semi-structured interviews with Sharī'ah and crypto experts, the study examines both the challenges and opportunities associated with implementing the framework.

One of the key challenges highlighted is the need for a diverse and capable team, combined with strong institutional support, to ensure the framework's successful adoption. Resistance to change among scholars and stakeholders further complicates this process, requiring a paradigm shift to embrace the framework's innovative approach. The absence of a proven track record for the framework adds another layer of difficulty, as it may result in skepticism or reluctance among individuals, creating a cycle that hinders broader implementation. Despite these challenges, the inevitability of effective risk management and the need for robust standards in the crypto asset space underscore the framework's significance. The experts interviewed in the study are of the opinion that the proposed model could enhance Sharī'ah scholars' understanding of crypto assets and their associated market dynamics. They added that the framework offers a systematic basis for deriving juristic opinions that withstand scrutiny.

The research also provides valuable recommendations for various stakeholders. For jurists, the study emphasizes the importance of adopting an independent and well-informed perspective, free

Table 9. Revised risk severity matrix

Matrix		Impact-0.75 Negligible (1)	Minor (2)	Marginal (3)	Significant (4)	Critical (5)
Probability-0.25	**Certain (5)**	Low (2.00)	Medium (2.75)	Medium (3.50)	High (4.25)	V. high (5.00)
	Probable (4)	Low (1.75)	Medium (2.50)	Medium (3.25)	High (4.00)	V. high (4.75)
	Possible (3)	Low (1.50)	Medium (2.25)	Medium (3.00)	High (3.75)	High (4.50)
	Improbable (2)	Low (1.25)	Low (2.00)	Medium (2.75)	Medium (3.50)	High (4.25)
	Highly improbable (1)	Low (1.00)	Low (1.75)	Medium (2.5)	Medium (3.25)	High (4.00)

Source(s): Authors' own work

Table 10. Risk levels and corresponding severity range – revised

Level	Severity range
Low	Level < 2.25
Medium	$2.25 \leq$ level < 3.75
High	$3.75 \leq$ level < 4.75
Very high	Level ≥ 4.75

Source(s): Authors' own work

from biases often found in reports issued by governmental bodies. It suggests segregating the Fiqh perspective from the Maqāṣid-based approach to avoid conflating risks with prohibited Gharar. The framework's systematic delineation of crypto asset technology can demystify its complexities, enabling jurists to base their judgments on clearer grounds. Moreover, the study highlights the need to shift focus from early scholars' rulings, such as those concerning state rights to mint currency, to more pressing contemporary issues addressed by the framework.

The validated framework further clarifies the roots of juristic divergence in contemporary *fatāwā* on crypto assets. Certain rulings of permissibility – such as those issued by the Shariyah Review Bureau (2018), which examine the Sharīʿah compliance of a token by screening the project and its financial ratios – apply limited Sharīʿah filters and then advance to *maqāṣid*-based justifications such as innovation and financial inclusion, without subjecting the asset to a more comprehensive legal appraisal involving screening of services, contract structure, and cyber-resilience. In contrast, a number of prohibition rulings – for instance, that of Dār al-Iftāʾ al-Miṣriyyah (Allam, 2017) – invoke concerns such as negative economic effects, market imbalance, systemic instability, or criminal deception as if these higher-order objectives in themselves constitute primary Sharīʿah impediments, thereby conflating *maqāṣid* considerations with legal invalidators such as Ribā, Gharar or Maysir. Added to this confusion is the widespread failure to distinguish between fundamentally different categories of crypto assets (e.g. utility tokens, payment tokens, security tokens), which results in the indiscriminate application of criteria suitable only to certain types. Introducing a tiered method that sequentially evaluates the project, services, token, contractual structure and cyber-resilience prior to moving to *maqāṣid*-based appraisal, highlights that the divergence of *fatwā* outcomes is not due to disagreement over primary legal sources but rather stems from methodological inconsistency and category error. Although it does not remove the legitimate interpretive diversity inherent in Islamic law, it provides the structured legal rigor necessary to reduce discretionary variance and promote greater doctrinal coherence in future *fatāwā*.

For institutions, the research recommends that standard-setting bodies like AAOIFI incorporate clauses addressing the classification and evaluation of crypto asset types. Academic institutions are encouraged to advance research on crypto assets from a Sharī'ah perspective, using the proposed framework as a foundation. In addition, given the vast number of crypto assets in existence, the study advocates institutionalizing the framework and fostering multidisciplinary teams to provide periodic evaluations. Establishing channels of collaboration between institutions and Sharī'ah scholars is critical for enhancing understanding and creating a cohesive approach to crypto asset analysis.

Regulatory bodies can benefit from integrating the framework into their guidelines to enhance oversight and reduce the prevalence of scams and fraudulent schemes in the crypto asset space. By implementing the framework's processes, including project scrutiny, issuer evaluation and comprehensive risk analysis, regulatory efforts can become more systematic and effective. Similarly, policymakers are urged to institutionalize the framework by

promoting standardized practices, fostering regulatory collaboration and exploring the potential for a rating agency to evaluate crypto assets transparently and consistently.

Despite its novel contributions, this study acknowledges certain limitations. While the framework has been conceptually validated, it requires extensive real-world testing to assess its practical applicability and gather empirical data for further refinement. As with most evaluative tools in Islamic finance, a degree of subjectivity in scholars' interpretations remains inevitable, meaning that even when applying the same framework, differing *fatāwa* on the same asset may still arise. Although the diversity in fatwas should also be acknowledged since different scholars come from different madhhab. This underscores the need for comparative application across multiple cases and jurisdictions to determine whether the framework produces consistent outcomes or reveals meaningful differences in scholarly assessments. Moreover, the evolving nature of crypto asset markets and technologies also necessitates continuous adaptation of the framework to remain relevant. Addressing these limitations will require institutional sponsorship and the involvement of a diverse team of experts to nurture and refine the frame work in dynamic contexts.

Looking forward, this study underscores the importance of establishing a robust track record through practical applications of the framework at an institutional level. Such efforts would not only strengthen its credibility but also facilitate a paradigm shift among scholars and researchers. This research aligns the framework with ongoing developments in the crypto asset landscape, contributing to more effective risk management, regulation and the establishment of standards that address the diverse needs of stakeholders in the digital asset ecosystem.

Note

[1.] https://riverside.fm/transcription

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