Explaining an Islamic Accounting Model from the Perspective of Financial Innovation Using Artificial Intelligence

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Abstract: The present study aimed to identify and explain the key components of an Islamic accounting model from the perspective of artificial intelligence–based financial innovation and to examine the effects of these components on the development of financial innovation. Given the rapid advancement of intelligent technologies and their growing role in financial systems, identifying the factors influencing the establishment of an artificial intelligence–based Islamic accounting system can facilitate the development of innovative financial instruments and services that comply with Sharia principles. In terms of purpose, this study was applied, and in terms of nature, it was exploratory. The study was conducted using a mixed-methods approach. In the qualitative phase, data were collected through semi-structured interviews with 13 experts in Islamic accounting, financial technology, and artificial intelligence. The participants were selected using purposive and snowball sampling, and the data were analyzed through thematic analysis. After the principal components and dimensions had been identified, the conceptual research model was developed. In the quantitative phase, the relationships among the research variables were subsequently tested. The analysis of the interviews resulted in the identification of 195 initial concepts, which were organized through coding and categorization into four principal dimensions: organizational, cultural, human, and technological-governance components. The findings indicated that all four dimensions had positive and significant effects on the development of financial innovation. Among the identified dimensions, technological-governance components—including Sharia and jurisprudential compliance, data governance, information security, intelligent financial processes, information transparency, and technological infrastructure—had the strongest effect on the development of artificial intelligence–based financial innovation. In addition, human, cultural, and organizational components contributed to the realization of financial innovation through the development of human capital, reinforcement of Islamic values, managerial support, and improvement of organizational structures, respectively. The findings demonstrate that the development of financial innovation within an Islamic accounting framework requires simultaneous attention to technological, human, cultural, and organizational dimensions. Artificial intelligence can contribute to financial innovation when appropriate technological infrastructure, governance frameworks aligned with Sharia standards, specialized human resources, and an organizational culture grounded in Islamic values are developed in a coordinated manner. The results may provide a foundation for policymaking, the development of professional standards, and the formulation of digital transformation strategies within Islamic accounting and financial systems.

Keywords: Islamic accounting, financial innovation, artificial intelligence, thematic analysis

1. Introduction

The accelerating digitalization of financial systems has transformed accounting from a predominantly retrospective recording function into an intelligent, data-intensive, and decision-oriented infrastructure. Artificial intelligence has become a central driver of this transformation by enabling automated data processing, anomaly detection, predictive analysis, real-time reporting, and intelligent decision support. Within accounting and finance, AI-based systems can process large volumes of structured and unstructured information more rapidly than conventional systems, identify patterns that may not be visible through traditional analytical procedures, and support more timely and informed managerial decisions. Nevertheless, the transition from traditional accounting to digital accounting is not merely a technical substitution of software for manual procedures. It requires changes in organizational structures, professional competencies, control systems, governance arrangements, and attitudes toward technological adoption. Therefore, the development of an AI-enabled accounting model must be understood as a multidimensional transformation involving technological, organizational, human, and institutional factors [1-3].

The implications of this transformation are particularly significant for Islamic accounting, which is founded not only on conventional principles of recognition, measurement, disclosure, and accountability but also on compliance with Sharia principles and Islamic ethical values. Islamic accounting seeks to provide financial information that supports economic justice, transparency, stewardship, social responsibility, and the legitimate conduct of transactions. Its objectives therefore extend beyond the interests of shareholders and creditors to include a broader range of stakeholders and social obligations. In this context, accounting practices must reflect principles such as fairness, trustworthiness, prohibition of interest, avoidance of excessive uncertainty, lawful contractual relationships, and accountability before both society and God. However, the operationalization of these principles within modern financial institutions remains challenging because Islamic accounting systems must simultaneously respond to rapidly changing financial technologies, diverse jurisprudential interpretations, evolving reporting needs, and the complexity of contemporary financial products [4-6].

Islamic accounting has increasingly attracted scholarly attention because of the expansion of Islamic banking, Islamic capital markets, takaful, Islamic social finance, and Sharia-compliant investment instruments. The growth of this field has created a need for accounting frameworks capable of representing the distinctive economic substance and ethical foundations of Islamic financial transactions. Scientometric evidence concerning Islamic financial reporting indicates that the field has developed substantially, yet its literature remains fragmented across accounting, finance, jurisprudence, governance, and sustainability domains. This fragmentation has limited the development of integrated models capable of addressing both the normative foundations of Islamic accounting and the technological requirements of contemporary financial systems. Existing criticisms also point to inconsistencies in standards, variations in institutional implementation, insufficient harmonization between jurisdictions, and continuing reliance on conventional accounting concepts that may not fully represent the objectives of Islamic finance [4, 5].

Financial innovation has further intensified the need to reconsider the architecture of Islamic accounting systems. Financial innovation encompasses the development and adoption of new financial instruments, processes, organizational models, digital platforms, and methods of delivering financial services. In Islamic finance, innovation must satisfy two simultaneous requirements: it must enhance efficiency and accessibility while remaining consistent with Sharia principles. Digital banking, crowdfunding, blockchain-based contracts, mobile

payment systems, algorithmic investment platforms, and intelligent credit assessment mechanisms have created new opportunities for expanding financial inclusion and improving service quality. However, these innovations also create new risks associated with information asymmetry, cybersecurity, data privacy, regulatory uncertainty, and inappropriate replication of conventional financial instruments under nominally Islamic structures. Accordingly, financial innovation in Islamic institutions requires an accounting model that can capture complex transactions, support transparent reporting, enable continuous monitoring, and ensure that technological innovation does not compromise substantive Sharia compliance [7-9].

Artificial intelligence can contribute to this objective by strengthening the analytical, monitoring, and control capabilities of Islamic accounting systems. Machine learning algorithms can be used to classify transactions, identify unusual financial activities, predict liquidity and credit risks, improve fraud detection, and enhance the accuracy of financial forecasts. Natural language processing can assist in reviewing contracts, analyzing jurisprudential texts, extracting relevant clauses, and comparing the characteristics of financial products with Sharia requirements. Intelligent systems may also support automated auditing, continuous control, real-time disclosure, and the evaluation of financial products against predetermined ethical and legal criteria. In Islamic social finance, AI-based models have already been proposed to improve the allocation of zakat and Qardh al-Hasan funds by matching financial resources with the needs of individuals and small enterprises. Such applications demonstrate that artificial intelligence can be aligned with the distributive and social objectives of Islamic finance when it is embedded within an appropriate ethical and governance framework [9-11].

Despite these opportunities, the use of artificial intelligence in Islamic accounting introduces complex questions regarding the legitimacy, explainability, and accountability of automated decisions. AI algorithms may produce technically accurate outputs while relying on opaque processes that cannot be readily interpreted by accountants, auditors, Sharia scholars, or financial stakeholders. This lack of explainability can weaken confidence in automated assessments, particularly when an algorithm determines whether a transaction complies with Islamic jurisprudential principles. Furthermore, AI systems are shaped by the data used to train them. Incomplete, biased, inconsistent, or nonstandardized data can generate inaccurate classifications and potentially lead to improper financial or Sharia-related judgments. The use of AI therefore does not eliminate the need for professional judgment or Sharia supervision; rather, it changes the nature of those functions by requiring specialists to evaluate algorithmic outputs, monitor model performance, and intervene when automated decisions are uncertain or inconsistent with Islamic objectives [3, 12, 13].

A Maqasid al-Shariah perspective provides an important normative basis for evaluating AI applications in Islamic finance and accounting. Under this perspective, technological systems should be assessed not merely according to their efficiency or profitability but also according to their contribution to the protection of religion, life, intellect, progeny, and wealth, as well as their broader effects on justice, welfare, and human dignity. AI-based accounting systems should therefore promote transparent transactions, protect stakeholders from exploitation, preserve the confidentiality and security of financial information, and prevent technological mechanisms from facilitating prohibited or socially harmful activities. The adoption of artificial intelligence is justifiable within Islamic finance when it serves legitimate objectives and when its design, governance, and implementation remain subject to ethical and Sharia-based constraints. Consequently, an Islamic accounting model based on artificial intelligence should include mechanisms for human oversight, ethical evaluation, Sharia review, and accountability for automated outcomes [11-13].

The transformation of Sharia accounting systems through artificial intelligence also depends heavily on technological infrastructure and organizational readiness. Institutions require integrated information systems, reliable databases, secure digital platforms, appropriate analytical tools, and sufficient investment in technology. Fragmented systems and poor data quality reduce the effectiveness of AI applications because intelligent models depend on comprehensive, accurate, timely, and standardized information. Information security and data governance are especially important in financial institutions, where unauthorized access, data manipulation, and cyberattacks can cause substantial financial and reputational damage. The digital transformation of Sharia accounting therefore requires policies governing data ownership, access, storage, sharing, validation, and protection. Without these foundations, AI implementation may increase operational vulnerability rather than enhance accounting quality and financial innovation [1, 2, 14].

Organizational factors likewise determine whether intelligent accounting technologies are effectively institutionalized. Senior management support is essential because AI implementation requires strategic direction, financial resources, coordination across departments, and long-term commitment. Managers must articulate a clear vision regarding the role of artificial intelligence in accounting, financial innovation, and Sharia compliance. They must also establish governance structures that assign responsibility for technological development, data management, internal control, risk assessment, and ethical supervision. Flexible organizational structures can facilitate collaboration among accounting professionals, information technology specialists, financial managers, auditors, and Sharia scholars. In contrast, fragmented responsibilities, unclear authority, and weak managerial support can create resistance, implementation ambiguity, and inconsistent use of intelligent systems. The opportunities and threats associated with AI in management accounting further demonstrate that technological value depends on how organizations integrate intelligent tools into planning, control, performance evaluation, and strategic decision-making processes [1, 6, 15].

Human capital constitutes another critical dimension of AI-based Islamic accounting. Accountants and financial professionals must possess more than conventional technical accounting knowledge; they increasingly require competencies in data analytics, information systems, algorithmic interpretation, cybersecurity awareness, and technology-assisted decision-making. In Islamic institutions, these competencies must be combined with knowledge of Islamic accounting standards, transaction jurisprudence, Sharia objectives, and the characteristics of Islamic financial instruments. Because few individuals possess expertise across all these domains, interdisciplinary collaboration is necessary. Accountants must be able to communicate with data scientists and software developers, while technology specialists must understand the legal and ethical requirements that shape Islamic financial transactions. Continuous professional education is therefore required to update competencies and reduce the knowledge gap between financial, technological, and Sharia-related disciplines [9, 14, 16].

The acceptance of digital accounting systems by users is also a decisive factor in successful implementation. Even technologically advanced systems may fail when users perceive them as difficult to operate, unreliable, incompatible with professional routines, or threatening to employment security. Integrated models of digital accounting acceptance indicate that performance expectations, perceived effort, facilitating conditions, social influence, and behavioral intentions affect the willingness of accounting professionals to adopt new systems. In the context of Islamic accounting, acceptance may additionally depend on whether users believe that the technology is consistent with Islamic values and sufficiently supervised by credible Sharia authorities. Trust in intelligent systems is therefore both a technological and cultural issue. Organizations must provide training, explain system functions,

communicate the intended benefits, and clarify how professional roles will evolve rather than simply be eliminated through automation [14, 16].

Cultural values play a particularly important role because Islamic accounting is embedded in a normative environment emphasizing justice, honesty, trustworthiness, responsibility, and service to stakeholders. An organizational culture that treats accounting merely as a compliance mechanism may not support the broader ethical objectives of an Islamic accounting model. By contrast, cultures that promote transparency, learning, innovation, collaboration, and moral accountability are more likely to use AI as a means of improving both financial performance and social legitimacy. Ethical control of technology is necessary to prevent the pursuit of efficiency from overriding stakeholder rights or Islamic values. Similarly, a culture of continuous learning can reduce resistance to digital transformation by enabling employees to understand and participate in technological change. These cultural foundations are relevant not only to Islamic finance but also to wider evidence showing that leadership and accounting practices can stimulate process innovation and improve organizational and environmental performance [6, 13, 17].

Corporate governance and Sharia governance provide the institutional mechanisms through which organizational, technological, and cultural factors can be coordinated. Sharia boards play an important role in reviewing financial products, monitoring compliance, and ensuring that innovation remains consistent with Islamic jurisprudential principles. Evidence from Islamic banks suggests that the interaction between Sharia boards and financial technology can influence the development and adoption of financial innovation. However, the effectiveness of this interaction depends on the expertise, independence, accessibility, and technological awareness of Sharia board members. AI can assist Sharia boards by automating routine assessments and identifying potential violations, but it cannot independently resolve complex jurisprudential questions or differences of interpretation. Accordingly, intelligent systems should support rather than replace Sharia governance, and their outputs should remain subject to review by qualified experts [11, 12, 18].

The relationship between financial innovation and institutional performance is not inherently positive, because innovation may generate both competitive advantages and new forms of risk. Research on financial innovation indicates that innovation can affect financial stability and organizational vulnerability, particularly when institutions invest in technologies or products without adequate risk management, internal control, and governance. In accounting systems, AI can strengthen risk assessment through predictive analytics, continuous monitoring, and automated alerts, but reliance on complex technologies can also create model risk, cybersecurity exposure, and dependence on specialized service providers. Islamic financial institutions therefore need to integrate innovation with prudent risk management and transparent reporting. An Islamic accounting model should identify not only the benefits of intelligent systems but also the control mechanisms necessary to prevent technological innovation from increasing financial instability or weakening stakeholder protection [3, 15, 19].

Another important challenge concerns standardization and regulation. Islamic financial institutions operate under different legal systems, accounting standards, and Sharia governance structures, which complicates the development of universally applicable AI models. Algorithms designed for one institutional environment may not accurately reflect the reporting requirements or jurisprudential interpretations of another. Moreover, the absence of specialized rules governing algorithmic accountability, data use, automated auditing, and AI-assisted Sharia assessment can create uncertainty regarding legal responsibility. Regulators and professional bodies must therefore develop standards that define acceptable uses of AI, minimum requirements for transparency and explainability, data governance obligations, and the respective responsibilities of accountants, managers, developers, auditors,

and Sharia supervisors. Such frameworks should preserve opportunities for innovation while preventing unregulated technological experimentation in sensitive financial processes [5, 8, 12].

Artificial intelligence also offers the potential to enhance transparency and disclosure within Islamic accounting. Automated systems can accelerate report preparation, reconcile information across databases, identify inconsistencies, and provide stakeholders with more timely access to financial information. Continuous reporting may reduce the delay between economic events and their disclosure, while intelligent monitoring can improve transaction traceability and detect deviations from internal or Sharia-related requirements. However, increased data availability does not automatically produce meaningful transparency. Reports must remain understandable, relevant, reliable, and capable of explaining how intelligent systems have generated material classifications or estimates. In this regard, AI-based Islamic accounting should combine technological transparency with ethical transparency, ensuring that stakeholders can evaluate not only financial outcomes but also the legitimacy and fairness of the processes through which those outcomes were produced [2, 6, 11].

The COVID-19 pandemic demonstrated the strategic importance of digital financial systems by increasing demand for remote services, automated decision-making, and inclusive financial mechanisms. Islamic fintech applications involving zakat, interest-free financing, and digital platforms illustrated how AI and natural language processing could support vulnerable individuals and small enterprises during periods of economic disruption. These experiences showed that intelligent financial innovation can contribute to resilience and social welfare when it is directed toward genuine socioeconomic needs. They also highlighted the necessity of accounting systems capable of tracing fund allocation, measuring social outcomes, monitoring compliance, and providing credible information to donors, beneficiaries, regulators, and other stakeholders. Thus, the integration of artificial intelligence with Islamic accounting may strengthen both commercial financial services and socially oriented Islamic financial instruments [7, 8, 10].

The existing literature therefore presents valuable insights into Islamic accounting, fintech, Sharia governance, digital accounting acceptance, AI applications, and financial innovation; however, these streams of research have often developed separately. Some studies emphasize the technical capabilities of AI, whereas others focus on Sharia compliance, professional challenges, financial innovation, or organizational adoption. A comprehensive model must integrate these perspectives and clarify how organizational support, cultural values, specialized human capital, technological infrastructure, data governance, and Sharia supervision jointly contribute to AI-based financial innovation. The absence of such an integrated framework limits the ability of Islamic financial institutions to design coherent transformation strategies and may lead to fragmented implementation in which technological investment proceeds without corresponding changes in governance, professional competencies, or organizational culture [6, 14, 18].

Accordingly, the aim of the present study was to explain the components of an Islamic accounting model from the perspective of artificial intelligence–based financial innovation and to determine the role of its organizational, cultural, human, and technological-governance dimensions in the development of financial innovation.

2. Methodology

The present study adopted a qualitative approach and employed thematic content analysis. This method was selected because of the exploratory nature of the research and its objective of identifying and explaining the components of an Islamic accounting model from the perspective of financial innovation using artificial intelligence. Thematic content analysis enables researchers to extract, classify, and interpret semantic patterns

within qualitative data and provides a coherent framework for identifying the dimensions, requirements, opportunities, and challenges associated with the research phenomenon.

The research population consisted of accounting and auditing experts employed by accounting and auditing organizations in Fars Province and neighboring provinces. The expert-selection criteria included having published at least five scientific articles in the fields of Islamic reporting and financial innovation and possessing at least 10 years of professional experience in accounting, auditing, or financial management. Purposive sampling was used, and the interviews continued until theoretical saturation was achieved. Although 13 interviews were conducted, theoretical saturation was reached after the 11th interview.

The research data were collected through in-depth, semi-structured interviews. Before the interviews were conducted, the interview questions were sent to the experts, and the purpose of the study was explained to them. With the participants' consent, the interviews were audio-recorded, transcribed verbatim, and analyzed using MAXQDA software. The interview questions addressed topics such as the role of artificial intelligence in the development of Islamic accounting, implementation requirements, opportunities, challenges, and the consequences of implementing the proposed model. The questions were revised and supplemented during the research process in response to emerging findings.

Data analysis was conducted according to the stages of thematic content analysis, including the extraction of initial codes and the formation of basic, organizing, and overarching themes. To enhance the credibility and dependability of the findings, several strategies were employed, including constant comparison of the data, member checking, detailed documentation of the analytical procedures, and adherence to research ethics. The ethical principles observed included obtaining informed consent, protecting the confidentiality of participants' information, and using the collected data exclusively for scientific purposes.

To ensure the trustworthiness of the findings, the study applied commonly accepted qualitative research criteria, including credibility, transferability, dependability, and confirmability. To enhance credibility, logical relationships among the raw data, initial codes, basic themes, organizing themes, and overarching themes were established systematically. The researcher repeatedly reviewed the interview transcripts and continuously compared the data to ensure that the extracted themes accurately reflected the participants' perspectives. Furthermore, the inclusion of diverse experts, including university faculty members, Islamic accounting specialists, financial technology specialists, artificial intelligence experts, and financial managers, enriched the data and enhanced the transferability of the findings.

To improve dependability and confirmability, all stages of data collection and analysis were carefully documented, and portions of the coding and theme-development processes were reviewed and confirmed by the research supervisors, advisors, and several subject-matter experts. In addition, the complete recording of the interviews, verbatim transcription of the data, use of direct participant quotations, and observance of ethical principles—including informed consent, confidentiality, and the exclusive use of the data for scientific purposes—contributed to the methodological rigor and scientific credibility of the findings.

3. Findings and Results

This study adopted an inductive approach because broader conclusions were derived from detailed qualitative findings through systematic data analysis and coding. Under this approach, the interview content was examined to identify recurring concepts and patterns, which were coded when they demonstrated sufficient conceptual

relevance and recurrence. Related initial codes were subsequently grouped under higher-order categories through axial and selective coding.

In this phase of the study, data obtained from the in-depth expert interviews were analyzed. Because the study employed thematic content analysis, the analytical process focused on identifying, extracting, and classifying themes within the interview transcripts. After the interviews had been transcribed verbatim, the transcripts were read several times to enable the researcher to develop a comprehensive understanding of the data. Meaning units related to the research topic were then identified, and initial coding was performed.

In the first stage of the analysis, the transcripts of all interviews were reviewed repeatedly to obtain a comprehensive understanding of their content. The interview texts were then examined carefully, and initial codes were extracted from the data. Concepts associated with explaining an Islamic accounting model from the perspective of financial innovation using artificial intelligence were subsequently identified. At this stage, the data were analyzed systematically to identify the most important concepts and semantic patterns reflected in the participants' perspectives.

In the next stage, the initial codes were classified into basic themes according to their conceptual similarities and relationships. The basic themes were then grouped into organizing themes, and overarching themes representing the principal dimensions of the Islamic accounting model based on financial innovation and artificial intelligence were ultimately identified. This process facilitated the identification of relationships among the themes and the development of a coherent framework for explaining the research model. The extracted codes and themes are presented in Table 1.

Table 1. Classification of Open, Axial, and Selective Codes for the Components of the Artificial Intelligence–Based Islamic Accounting Model

Selective coding	Axial coding	Open coding
Organizational components	Leadership and management support	Senior management support; managerial support; strategic management support; inadequate management support; transformational leadership; financial innovation orientation; managerial awareness; financial support and incentives
Organizational components	Risk management and control	Financial risk management; financial risk assessment; financial risk forecasting; high-risk transaction alerts; internal control; intelligent internal control; continuous system monitoring; continuous performance monitoring; real-time financial monitoring; reduction of financial misconduct; automated contract review
Organizational components	Interdisciplinary collaboration and interaction	Effective interdepartmental communication; interdepartmental coordination; financial and technological interaction; interprofessional interaction; interdisciplinary teamwork; interdisciplinary teams; joint specialist teams; communication skills; interdisciplinary collaboration; inadequate interdisciplinary collaboration; knowledge gaps across disciplines; knowledge exchange
Organizational components	Organizational structure, policymaking, and governance	Corporate governance; effective corporate governance; flexible organizational structure; policy frameworks; implementation procedures; technology policymaking; Sharia supervisory mechanisms; regulatory mechanisms; absence of laws and regulations; legal risk; absence of specialized standards; need for specialized standards; absence of unified standards; development of professional frameworks
Cultural components	Justice, ethics, and integrity	Islamic justice; economic justice; fairness in reporting; justice and trustworthiness; trustworthiness; professional ethics; financial ethics; ethical oversight of technology; honesty in reporting; social responsibility; adherence to professional ethics; identification of ethical issues; Islamic values; commitment to Islamic values
Cultural components	Accountability and stakeholder orientation	Financial accountability; organizational accountability; responsibility toward stakeholders; protection of stakeholder rights; attention to stakeholders; social responsibility; culture of trust; trust in technology; trust in intelligent systems
Cultural components	Learning, innovation, and transformation	Innovative organizational culture; learning culture; continuous learning; continuing education; specialized training; interdisciplinary training; joint training; development of educational programs; knowledge updating; positive attitude toward innovation; innovation orientation; positive attitude toward technology; positive attitude toward

		digital transformation; technology acceptance; acceptance of technology within an Islamic framework; readiness for change; cultural readiness for change; limited readiness for digital transformation; acceptance of change; flexibility
Human components	Data analysis and intelligent decision-making	Big data analytics; financial data analysis; complex data analysis; data-driven decision-making; Islamic decision-making; decision support; evaluation of artificial intelligence outputs; evaluation of artificial intelligence algorithms; analytical thinking; problem-solving; understanding and evaluating algorithmic performance
Human components	Human capital and specialized competencies	Specialized human capital; skilled personnel; shortage of skilled personnel; knowledge of Islamic accounting; accounting knowledge; financial and Islamic knowledge; interdisciplinary knowledge; interdisciplinary competence; information technology skills; technological skills; familiarity with Islamic standards; professional expertise
Technological-governance components	Sharia and jurisprudential compliance	Adherence to Sharia; adherence to jurisprudential principles; adherence to Islamic rulings; Sharia compliance; Sharia supervision; Sharia compliance controls; Sharia compliance assessment; intelligent Sharia auditing; intelligent Sharia supervision; identification of Sharia violations; identification of deviations from Sharia; automation of Sharia assessments; adherence to Sharia principles; knowledge of Sharia foundations; knowledge of transaction jurisprudence; knowledge of Sharia requirements; complexity of Sharia rulings; difficulty of developing jurisprudential algorithms; specialized Sharia supervision; trust in Sharia institutions; technological legitimacy; alignment of technology with Islamic values; attitudes toward the relationship between technology and Sharia
Technological-governance components	Transparency and disclosure	Financial transparency; information transparency; transparency of financial information; full disclosure; digital transparency; honesty and transparency; culture of transparency; accuracy of financial information; information reliability; transaction traceability; data traceability
Technological-governance components	Financial intelligence and automation	Intelligent financial systems; automated financial monitoring; intelligent transaction classification; intelligent financial processes; accounting automation; rapid report processing; automation of Sharia assessments; intelligent transaction control; intelligent transaction monitoring
Technological-governance components	Security, privacy, and data governance	Financial information security; data security; data privacy; data protection policies; data governance; information management; data integration; data quality; poor data quality; lack of standardized data; database development
Technological-governance components	Infrastructure and technological readiness	Information infrastructure; advanced technological infrastructure; digital infrastructure; integrated financial systems; weaknesses in technological infrastructure; traditional systems; digital investment; technological investment; familiarity with artificial intelligence; familiarity with big data; familiarity with data mining; skills in using digital tools; ability to use analytical software
Technological-governance components	Implementation challenges and requirements	Shortage of specialists; high implementation costs; limited financial resources; lack of organizational resources; employee resistance; resistance to change; job-security concerns; management of job-related concerns; ambiguity in implementation; technological barriers; human barriers; holistic implementation approach; procurement of financial resources

As shown in Table 1, the open codes extracted from the research interviews were classified into four overarching categories.

Organizational Components

Organizational components refer to the structures, policies, resources, and managerial mechanisms required to implement artificial intelligence–based Islamic accounting. The findings indicated that senior management support, a clearly articulated vision for financial innovation and digital transformation, and adequate resource allocation are among the most important determinants of success in this area. Flexible organizational structures, effective corporate governance systems, clear policy frameworks, and appropriate implementation procedures also play important roles in the successful institutionalization of this approach. The participants emphasized the need for coordination among financial, information technology, and Sharia supervisory units and identified interdisciplinary collaboration as an essential prerequisite for success. In addition, internal control systems, effective supervisory mechanisms, and organizational risk management can facilitate the safe and effective application of intelligent technologies.

Cultural Components

Cultural components represent the values, beliefs, attitudes, and norms that either facilitate or constrain the adoption and development of artificial intelligence–based Islamic accounting. The findings indicated that values such as justice, trustworthiness, honesty, accountability, social responsibility, and adherence to Islamic principles play central roles in establishing a culture conducive to this approach. A positive attitude toward innovation, acceptance of emerging technologies, trust in intelligent systems, and confidence in the compatibility of technology with religious values were also identified as factors influencing the success of this transformation. A culture of learning, participation, knowledge exchange, and readiness for change was recognized as a necessary cultural foundation for the use of intelligent technologies. Conversely, resistance to change, job-security concerns, and dependence on traditional practices were identified as the most important cultural barriers.

Human Components

Human components refer to the knowledge, skills, competencies, and individual characteristics required for the effective implementation and use of artificial intelligence–based Islamic accounting. The findings indicated that the successful application of this approach requires accountants and financial managers to possess knowledge of Islamic accounting, awareness of jurisprudential principles and rulings, technological proficiency, and the ability to analyze financial data. Interdisciplinary competencies, analytical thinking, problem-solving, data-driven decision-making, and the capacity to evaluate artificial intelligence outputs were also identified as essential capabilities. The participants emphasized the importance of continuous learning and the regular updating of specialized knowledge, maintaining that human resources must be capable of adapting to rapid developments in financial technology and artificial intelligence. Communication skills and the ability to collaborate with technology specialists and Islamic jurisprudence experts were also recognized as key requirements.

Technological-Governance Components

Technological-governance components relate to the technical infrastructure, supervisory mechanisms, governance arrangements, and legal requirements necessary for developing artificial intelligence–based Islamic accounting. The findings indicated that advanced digital infrastructure, integrated information systems, standardized high-quality data, and intelligent financial analysis tools are fundamental prerequisites. Financial information security, data confidentiality, data governance, and transaction traceability are also essential for establishing trust and confidence in intelligent technologies. Moreover, the development of specialized standards, legal frameworks, regulatory requirements, and Sharia compliance assessment mechanisms is necessary to guide the appropriate use of artificial intelligence. These components provide the foundation for the intelligent automation of financial processes, greater transparency, continuous monitoring of Sharia compliance, and improvement in the quality of financial reporting within an Islamic values framework.

Based on the extracted components, the proposed research model is presented in Figure 1.

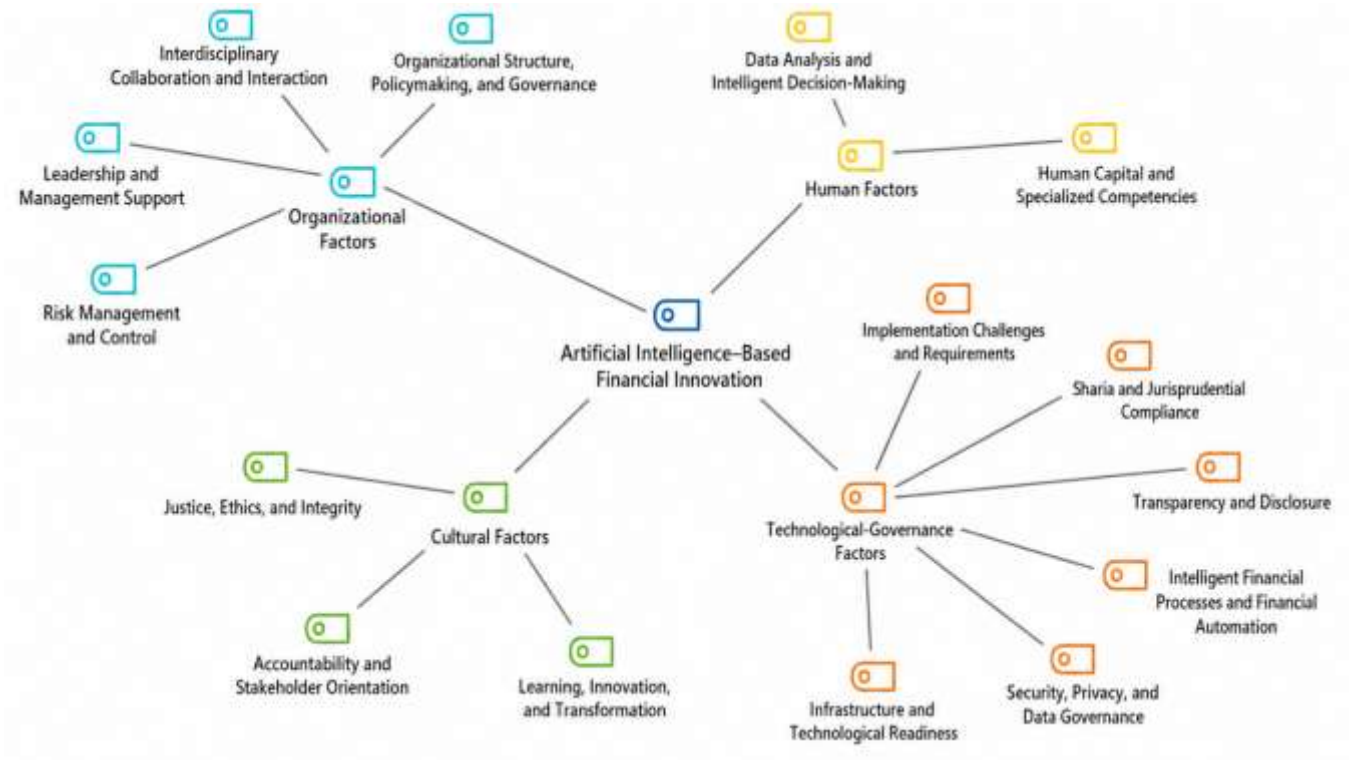


Figure 1. Thematic Model of the Study

4. Discussion and Conclusion

The present study sought to explain an Islamic accounting model from the perspective of artificial intelligence–based financial innovation. The findings identified four overarching dimensions—organizational, cultural, human, and technological-governance components—that collectively shape the capacity of Islamic accounting systems to benefit from artificial intelligence and contribute to financial innovation. The results further indicated that all four dimensions had positive and significant effects on financial innovation, with technological-governance components demonstrating the strongest influence. This pattern suggests that the successful integration of artificial intelligence into Islamic accounting cannot be reduced to the acquisition of new software or analytical tools. Rather, it requires an integrated institutional architecture in which technological infrastructure, Sharia governance, human competencies, organizational support, and Islamic ethical values operate in a coordinated manner. This interpretation is consistent with research showing that the transition from traditional to digital accounting is a systemic transformation that affects accounting processes, organizational structures, professional roles, and decision-making mechanisms [1, 3, 14].

The organizational dimension included leadership and management support, risk management and control, interdisciplinary collaboration and interaction, and organizational structure, policymaking, and governance. The prominence of these components indicates that AI-based Islamic accounting requires explicit strategic commitment from senior management. Managers must provide financial resources, establish implementation priorities, create a coherent digital transformation vision, and ensure coordination among accounting, information technology, risk management, auditing, and Sharia supervisory units. Artificial intelligence projects are unlikely to generate meaningful financial innovation when they are implemented as isolated technical initiatives without managerial sponsorship or alignment with organizational strategy. The findings are consistent with studies emphasizing that

AI creates opportunities in management accounting only when organizations integrate technological capabilities into planning, control, risk assessment, and strategic decision-making processes [2, 15]. They also align with evidence that leadership and organizational support can facilitate process innovation by mobilizing resources, encouraging participation, and reducing resistance to new accounting practices [17].

Leadership and management support may influence financial innovation through several mechanisms. First, senior managers determine the extent to which artificial intelligence is treated as a strategic investment rather than a temporary technological trend. Second, they shape employees' perceptions of the legitimacy, usefulness, and security of intelligent systems. Third, management is responsible for defining accountability when AI-supported decisions produce errors, Sharia compliance concerns, or unintended financial consequences. The need for managerial support is particularly important in Islamic institutions because technological innovation must be reconciled with religious, legal, and professional requirements. The literature on digital accounting acceptance similarly indicates that facilitating conditions, institutional support, perceived usefulness, and social influence affect employees' willingness to use advanced accounting systems [16]. Accordingly, the organizational findings of the present study demonstrate that managerial commitment provides the institutional foundation through which technological capabilities can be translated into actual financial innovation.

Risk management and intelligent control emerged as another major organizational component. The identified codes included financial risk assessment, risk forecasting, high-risk transaction alerts, continuous monitoring, intelligent internal control, automated contract review, and the reduction of financial violations. These findings show that AI-based Islamic accounting is expected not only to improve efficiency but also to strengthen preventive and continuous control. Artificial intelligence can analyze transactions in real time, recognize abnormal patterns, identify inconsistencies, and provide early warnings before financial losses or compliance violations become substantial. This result is supported by previous research showing that AI applications can enhance fraud detection, forecasting, audit procedures, and financial monitoring, although they may simultaneously create model risk, cybersecurity risk, and dependence on complex technological systems [2, 3]. The findings also correspond with evidence that financial innovation may increase institutional vulnerability when it is not accompanied by adequate controls, prudent governance, and risk-management procedures [19].

The importance of interdisciplinary collaboration further indicates that AI-based Islamic accounting cannot be designed or operated by accountants alone. The proposed model requires sustained interaction among accounting professionals, financial managers, software developers, data analysts, auditors, legal specialists, and Sharia scholars. Each group contributes a distinct form of expertise: accountants understand recognition and reporting processes, technology specialists design and maintain intelligent systems, and Sharia experts assess the jurisprudential legitimacy of transactions and financial products. Weak communication among these groups may produce technically advanced systems that do not satisfy accounting standards or Sharia requirements. Prior studies have similarly shown that Islamic fintech innovation depends on cooperation among technical, financial, and Sharia governance actors [9, 18]. Therefore, the present findings extend the literature by positioning interdisciplinary collaboration as an organizational capability through which artificial intelligence can be embedded responsibly in Islamic accounting.

The cultural dimension comprised justice, ethics, and integrity; accountability and stakeholder orientation; and learning, innovation, and transformation. These findings reflect the distinctive normative character of Islamic accounting. In this context, accounting is not merely a neutral mechanism for measuring financial performance; it is also expected to promote justice, transparency, trustworthiness, responsibility, and protection of stakeholder

rights. Artificial intelligence may increase the speed and scope of financial analysis, but its use cannot be considered successful if it undermines these values. The findings are consistent with the view that Islamic accounting should reflect Islamic ethical principles and wider social accountability rather than merely reproduce conventional accounting practices under different terminology [4, 5]. They also support the Sharia accounting model proposed by Menne et al., in which financial innovation is expected to remain aligned with ethical responsibility, accountability, and Islamic institutional principles [6].

Justice, professional ethics, honesty, and trustworthiness may also function as safeguards against the inappropriate use of artificial intelligence. Intelligent accounting systems can influence credit evaluation, investment decisions, risk classifications, resource allocation, and the identification of Sharia-compliant transactions. If the underlying algorithms reflect biased data or prioritize profitability without ethical constraints, they may produce outcomes inconsistent with Islamic objectives. From a Maqasid al-Shariah perspective, AI applications must protect wealth, prevent harm, support public welfare, and maintain human dignity. Therefore, the legitimacy of AI in Islamic finance depends not only on the technical accuracy of its outputs but also on the fairness and social consequences of its operation [13]. This interpretation is also compatible with research emphasizing that AI-based Sharia compliance systems require ethical oversight, transparent criteria, and continuing expert review [11, 12].

The identification of accountability and stakeholder orientation demonstrates that trust is a central condition for AI-based financial innovation. Stakeholders must have confidence that financial data are reliable, confidential information is protected, automated decisions can be reviewed, and institutional actors remain responsible for the consequences of AI-assisted judgments. Artificial intelligence should not create an accountability gap in which managers, accountants, developers, and Sharia supervisors each attribute problematic outcomes to the technology. Instead, institutions require explicit responsibility structures and mechanisms for challenging, correcting, and explaining automated outputs. The importance of stakeholder accountability is supported by previous work on Islamic fintech, which emphasizes that innovative financial services must maintain transparency and Sharia compliance to preserve public confidence [7, 8]. The present findings consequently indicate that stakeholder trust is not an automatic outcome of technological sophistication; it must be constructed through ethical governance and explainable accounting processes.

The cultural subdimension of learning, innovation, and transformation also played an important role in the model. The relevant themes included continuous learning, specialized education, interdisciplinary training, knowledge updating, positive attitudes toward technology, acceptance of digital transformation, readiness for change, and organizational flexibility. These findings suggest that technological adoption is strongly conditioned by the organization's learning culture. Even highly capable AI systems may remain underutilized when employees distrust technology, fear job displacement, or lack confidence in their digital competencies. The results are consistent with digital accounting acceptance research showing that performance expectancy, effort expectancy, facilitating conditions, and behavioral intention influence the adoption of intelligent accounting systems [16]. They also correspond with findings that the global transformation of Sharia accounting systems requires continuous education, technological readiness, and cultural acceptance of innovation [14].

The human dimension consisted of data analysis and intelligent decision-making, together with human capital and specialized competencies. The identified capabilities included big data analytics, financial data analysis, algorithm evaluation, analytical thinking, problem-solving, data-driven decision-making, technological skills, knowledge of Islamic accounting, familiarity with Islamic standards, and interdisciplinary expertise. These results

demonstrate that artificial intelligence does not eliminate the need for professional accountants. Instead, it changes the nature of their work from routine data processing toward interpretation, evaluation, judgment, and strategic decision support. This conclusion aligns with research indicating that digital accounting requires accountants to develop competencies in data analytics, intelligent systems, information technology, and algorithm-assisted decision-making [1, 3]. It also supports studies describing AI, machine learning, and blockchain as complementary technologies that require knowledgeable human users capable of interpreting their financial and Sharia implications [9].

The ability to evaluate AI outputs is particularly important because algorithmic recommendations may be statistically accurate but professionally or jurisprudentially inappropriate. Islamic accounting decisions frequently involve complex contractual features, intentions, conditions, and differences in jurisprudential interpretation that cannot always be converted into fixed computational rules. Human experts must therefore review automated classifications, identify exceptional cases, and determine whether algorithmic conclusions are consistent with the substance of Islamic principles. This finding agrees with research warning that AI in Islamic finance creates oversight problems related to explainability, accountability, and the inability of algorithms to resolve complex Sharia questions independently [12]. It also confirms that AI should function as a decision-support mechanism for Sharia compliance rather than as a substitute for qualified scholarly and professional judgment [11, 13].

Among all dimensions, technological-governance components had the strongest influence on financial innovation. This dimension included Sharia and jurisprudential compliance, transparency and disclosure, financial intelligence and automation, security, privacy and data governance, infrastructure and technological readiness, and implementation challenges and requirements. The stronger effect of this dimension may be explained by the direct dependence of AI applications on data quality, technological infrastructure, integrated systems, security mechanisms, and regulatory legitimacy. Without reliable databases and suitable digital infrastructure, machine-learning models cannot produce accurate outputs. Similarly, without governance standards and Sharia supervisory mechanisms, technically efficient systems may not be accepted as legitimate within Islamic financial institutions. This conclusion is consistent with studies highlighting technological readiness, data availability, integrated systems, and regulatory oversight as fundamental prerequisites for AI-based transformation in accounting and finance [2, 12, 14].

Sharia and jurisprudential compliance formed a central component of technological governance. The findings included automated Sharia assessment, intelligent Sharia auditing, detection of Sharia violations, knowledge of transaction jurisprudence, specialized Sharia supervision, and alignment of technology with Islamic values. These results indicate that the distinguishing feature of the proposed model is not simply its use of artificial intelligence but its capacity to incorporate Sharia requirements into intelligent accounting and monitoring processes. Previous studies have similarly argued that AI can support the continuous review of financial transactions and identify potential noncompliance more rapidly than periodic manual assessment [11]. Evidence from Islamic banks also suggests that interaction between Sharia boards and fintech capabilities can promote financial innovation when technological systems remain subject to credible Sharia supervision [18]. However, the complexity of jurisprudential rulings means that automation should be accompanied by human review and clearly defined escalation procedures.

Transparency, disclosure, security, privacy, and data governance were also essential elements of the technological-governance dimension. AI-based accounting can strengthen transparency by accelerating reporting, improving transaction traceability, identifying inconsistencies, and supporting continuous disclosure.

Nevertheless, transparency depends on the quality and explainability of the generated information. Stakeholders must be able to understand material assumptions, classifications, and judgments rather than receiving opaque outputs from algorithms. At the same time, the collection and integration of extensive financial data increase privacy and cybersecurity risks. These results are supported by prior studies emphasizing that digital Islamic finance requires secure data management, trustworthy information systems, and appropriate protection of financial information [7, 8]. The findings also correspond with AI research identifying data quality, algorithmic opacity, privacy, and cybersecurity as major challenges in accounting and finance [3].

The results regarding intelligent financial processes and automation further show how AI may directly support financial innovation. Automated transaction classification, real-time monitoring, rapid reporting, intelligent internal control, and predictive analysis can reduce processing time and improve the responsiveness of Islamic financial institutions. AI can also facilitate innovative social-finance mechanisms by improving the identification of eligible beneficiaries, monitoring the allocation of funds, and integrating instruments such as zakat and Qardh al-Hasan into digital platforms. The AI- and natural language processing–based Islamic fintech model proposed for supporting individuals and small enterprises demonstrates the practical potential of intelligent technologies to serve both financial and social objectives [10]. More broadly, fintech research indicates that digital technologies can expand accessibility and develop new Islamic financial services when institutional controls and Sharia safeguards are maintained [7, 8].

Overall, the findings demonstrate that financial innovation within Islamic accounting is produced by the interaction of the four identified dimensions rather than by any single factor. Technological infrastructure enables intelligent accounting processes, human capital interprets and supervises those processes, organizational mechanisms coordinate their implementation, and cultural values determine their ethical orientation and legitimacy. The stronger effect of technological governance should therefore not be interpreted as evidence that human, organizational, or cultural dimensions are secondary. Advanced infrastructure without skilled users may remain ineffective; skilled employees without management support may be unable to institutionalize innovation; and organizational support without ethical and Sharia governance may produce innovations that lack legitimacy. The proposed model thus provides an integrated explanation of how AI can support financial innovation while preserving the distinctive objectives and responsibilities of Islamic accounting.

This study had several limitations. First, the qualitative phase was based on interviews with a relatively small group of experts selected through purposive and snowball sampling, which may limit the diversity of perspectives represented in the findings. The participants were primarily drawn from accounting and auditing organizations in Fars Province and neighboring provinces; therefore, the findings may not fully reflect the institutional, regulatory, and technological conditions of other regions or countries. Second, the extracted themes were based on participants' perceptions and professional experiences rather than direct observation of implemented AI-based Islamic accounting systems. Third, because artificial intelligence and financial technologies are developing rapidly, some technological requirements and implementation challenges may change over time. Finally, the broad scope of the proposed model did not permit a detailed examination of differences among Islamic banks, insurance institutions, investment companies, public organizations, and Islamic social-finance institutions.

Future studies should test the proposed model using larger and more diverse samples drawn from different industries, regions, and Islamic financial jurisdictions. Comparative research could examine whether the relative importance of organizational, cultural, human, and technological-governance components differs across Islamic banks, conventional banks offering Islamic services, takaful companies, auditing firms, and public-sector

institutions. Longitudinal studies are also recommended to evaluate how these components influence the different stages of AI adoption, from initial readiness to full implementation and institutionalization. Researchers could further develop measurement instruments for each dimension and test direct, mediating, and moderating relationships among managerial support, technological readiness, Sharia governance, employee acceptance, and financial innovation. Case studies of organizations that have already implemented AI-based accounting applications would also provide valuable evidence regarding practical outcomes, implementation failures, and effective governance mechanisms.

Islamic financial institutions should adopt a phased and integrated strategy for implementing artificial intelligence in accounting. Senior managers should establish multidisciplinary implementation committees comprising accountants, auditors, data specialists, cybersecurity professionals, legal experts, and Sharia scholars. Institutions should first assess the quality of their data, the integration of information systems, technological infrastructure, employee competencies, and existing governance mechanisms before investing in advanced AI applications. Professional training should combine digital competencies with Islamic accounting and jurisprudential knowledge. Clear policies should also be established for data access, privacy, algorithmic accountability, human oversight, and the review of Sharia-related outputs. Pilot projects should be conducted in limited, low-risk areas before intelligent systems are extended to sensitive financial and reporting processes.

Authors' Contributions

Authors equally contributed to this article.

Ethical Considerations

All procedures performed in this study were under the ethical standards.

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Conflict of Interest

The authors report no conflict of interest.

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