Design and Validation of a Model for the Development of Asset Management FinTechs in the Iranian Capital Market

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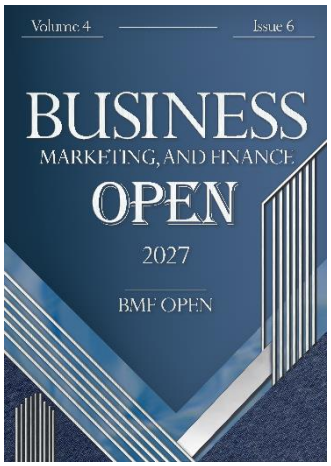

Citation: Navaeean, M., Khoshnood, M., & Maleki Choobari, M. (2027). Design and Validation of a Model for the Development of Asset Management FinTechs in the Iranian Capital Market. *Business, Marketing, and Finance Open*, 4(6), 1-16.

Received: 04 May 2026
Revised: 01 August 2026
Accepted: 06 August 2026
Initial Publication: 11 August 2026
Final Publication: 01 November 2027

Abstract: The present study aimed to design and validate a model for the development of asset management FinTechs in the Iranian capital market. Given the expansion of digital financial services, the growth of intelligent investment instruments, and the role of FinTechs in reducing transaction costs, increasing accessibility, and improving the quality of decision-making, the absence of an integrated framework compatible with the institutional, legal, technological, and behavioral characteristics of the Iranian capital market was identified as the principal research problem. In terms of purpose, the study was applied and developmental, and in terms of methodology, it employed an exploratory mixed-methods design. In the qualitative phase, purposive sampling was used to conduct 10 semi-structured interviews with managers and experts possessing specialized experience in the capital market and FinTech sectors. The data were analyzed through open, axial, and selective coding. In the quantitative phase, a researcher-developed questionnaire was distributed among 169 professionals and managers in the field, and the model was evaluated using the partial least squares approach. In addition, the opinions of 10 experts and the Analytical Hierarchy Process (AHP) and Interpretive Structural Modeling (ISM) techniques were used to prioritize the components and determine the hierarchical structure of the relationships. The qualitative findings revealed 33 categories across six dimensions: causal conditions, the central phenomenon, contextual conditions, intervening conditions, strategies, and consequences. Cronbach's alpha coefficients for the constructs ranged from 0.780 to 0.910, while composite reliability values ranged from 0.846 to 0.931. The R^2 values for the central phenomenon, strategies, and consequences were 0.671, 0.700, and 0.509, respectively. In the AHP prioritization, consequences ranked first with a weight of 0.3641, followed by strategies and contextual conditions. The ISM results also placed causal conditions at the most fundamental level and consequences at the final level of the model. Accordingly, the sustainable development of WealthTech in Iran requires the simultaneous reform of the regulatory environment, data and technological infrastructures, financial literacy, public trust, innovation-support mechanisms, and the design of multifunctional platforms.

Keywords: FinTech, asset management, WealthTech, capital market, data-driven.

1. Introduction

The accelerating digital transformation of financial systems has fundamentally altered how financial services are designed, delivered, regulated, and consumed. Financial technology, commonly referred to as FinTech, has moved beyond the digitization of conventional banking services and now encompasses a broad range of data-driven, platform-based, algorithmic, and decentralized financial solutions. These developments have transformed payment systems, lending, crowdfunding, insurance, investment advisory services, portfolio construction, risk assessment, and asset management. In capital markets, FinTech has created new possibilities for lowering

transaction costs, reducing information asymmetry, improving access to financial products, automating investment decisions, and enhancing the speed and precision of portfolio management. At the same time, it has introduced new regulatory, technological, operational, behavioral, and systemic risks. The growing influence of FinTech on institutional performance, profitability, risk-taking, and competitive structure demonstrates that the development of financial technologies cannot be treated merely as a technological issue; rather, it must be examined as a multidimensional managerial and institutional phenomenon [1, 2].

Among the various branches of FinTech, asset management FinTechs, often classified under the broader concept of WealthTech, have attracted increasing attention because they combine financial expertise with digital platforms, artificial intelligence, big-data analytics, cloud computing, blockchain, automated advisory systems, and algorithmic portfolio management. These technologies enable investors to receive personalized recommendations, monitor portfolios in real time, access diversified investment opportunities, and make decisions based on predictive analytics. For financial institutions, asset management FinTechs offer opportunities to improve operational efficiency, automate repetitive processes, optimize resource allocation, strengthen risk management, and expand services to previously underserved customer groups. Modern portfolio theory continues to provide a major conceptual foundation for investment allocation, but contemporary asset management increasingly depends on the ability to integrate portfolio optimization with real-time data, artificial intelligence, and institutional risk constraints [3]. Therefore, the development of asset management FinTechs requires not only investment models but also an integrated ecosystem involving technology, regulation, data governance, organizational capabilities, market infrastructure, and investor behavior.

The concept of asset management itself has evolved considerably. Traditionally, asset management was associated with the acquisition, operation, maintenance, valuation, and disposal of physical or financial assets. Contemporary approaches, however, consider asset management an integrated strategic system that aligns assets, organizational objectives, risk, performance, information, and long-term value creation. Studies across utilities, infrastructure, manufacturing, healthcare, and public-sector institutions show that effective asset management depends on structured governance, reliable information, performance measurement, risk-based decision-making, and organizational coordination [4-6]. Although many of these studies focus on physical assets, their underlying principles are directly relevant to financial asset management because both fields require continuous monitoring, lifecycle analysis, risk assessment, performance evaluation, and the integration of multiple information sources.

Information has become one of the most important strategic resources in modern asset management. The quality, accessibility, integration, timeliness, and interpretability of information determine the extent to which managers can evaluate asset performance and respond to emerging risks. In industrial asset management, information has been identified as a key dimension for developing effective management systems, especially where operational decisions depend on data collected from multiple organizational units and technologies [7]. In the financial sector, this informational requirement is even more critical because market conditions change rapidly and investment decisions are highly sensitive to incomplete, delayed, or distorted data. Asset management FinTechs can convert large volumes of market, corporate, behavioral, and transactional data into actionable knowledge. However, this potential depends on data quality, interoperability, analytical capability, cybersecurity, and access to reliable historical and real-time information.

The Internet of Things, artificial intelligence, machine learning, and cloud-based technologies have further expanded the boundaries of asset management. Research on the Internet of Things emphasizes that interconnected devices and data systems can strengthen asset visibility, monitoring, coordination, and decision-making [8, 9].

Although Internet of Things applications are more visible in physical asset environments, similar principles apply to financial ecosystems in which continuous data flows support portfolio monitoring, customer profiling, compliance, and risk control. Artificial intelligence-based machine-learning models have also demonstrated considerable potential in forecasting, predictive maintenance, classification, anomaly detection, optimization, and risk assessment across energy and infrastructure systems [10]. In construction asset management, artificial intelligence has been recognized as a major enabler of predictive decision-making, although challenges related to data quality, implementation cost, technical skills, organizational resistance, and model transparency remain substantial [11]. These findings suggest that the adoption of artificial intelligence in financial asset management must be accompanied by managerial, ethical, and regulatory mechanisms that ensure explainability, accountability, reliability, and human oversight.

Blockchain represents another influential technology in the transformation of asset management. Its decentralized architecture, immutability, traceability, and programmable transactions support new forms of digital ownership, asset tokenization, secure recordkeeping, and automated contractual execution. The convergence of blockchain, the metaverse, and digital asset management has created new opportunities for managing digital identities, virtual assets, decentralized financial services, and cross-platform ownership structures [12]. In parallel, blockchain-based FinTech management systems increasingly employ artificial intelligence algorithms and advanced computing technologies to improve data processing, transaction security, customer analysis, and automated decision-making [13]. Nevertheless, blockchain-based asset management also raises concerns regarding legal recognition, regulatory jurisdiction, cybersecurity, interoperability, consumer protection, market manipulation, and the valuation of digital assets. Consequently, technology adoption must be embedded within a coherent institutional framework rather than implemented as an isolated technical initiative.

The development of asset management FinTechs is also connected to broader transformations in financial intermediation. FinTech platforms can reduce dependence on traditional intermediaries by directly connecting investors, firms, entrepreneurs, and financial service providers. Crowdfunding platforms, for example, have expanded access to financial resources for small and medium-sized enterprises and have created alternative channels of capital formation [14]. This function is particularly important in economies where traditional bank financing is constrained, costly, or inaccessible to many firms. Asset management FinTechs can similarly facilitate the allocation of household savings toward productive investment opportunities, expand financial inclusion, and diversify the range of instruments available to retail investors. However, the effectiveness of these platforms depends on investor confidence, financial literacy, platform credibility, transparent pricing, adequate supervision, and the protection of client assets.

Financial innovation is increasingly linked not only to profitability and efficiency but also to sustainability and responsible finance. Research in financial institutions listed on the Tehran Stock Exchange indicates that FinTech-based innovation may support green transformational leadership through its interaction with green finance and green human resource management [15]. This perspective broadens the role of FinTech from a mechanism of cost reduction and service automation to a strategic enabler of sustainable organizational transformation. Asset management FinTechs can contribute to sustainable finance by incorporating environmental, social, and governance indicators into investment screening, portfolio design, and reporting. They can also make green investment opportunities more visible and accessible to individual investors. Nevertheless, the integration of sustainability criteria requires reliable nonfinancial data, standardized disclosure, and analytical tools capable of assessing long-term social and environmental risks.

A central challenge in asset management is the development of effective performance-measurement systems. The performance of an asset management system cannot be evaluated only through short-term financial returns; it must also be assessed in relation to risk, efficiency, resilience, service quality, sustainability, stakeholder satisfaction, and long-term value creation. Research on water companies has shown that asset management performance measurement requires multidimensional indicators capable of linking operational performance with strategic objectives and socioeconomic outcomes [16]. Similarly, strategic frameworks for urban infrastructure asset management emphasize longevity, resilience, service quality, lifecycle optimization, and coordination among stakeholders [17]. For asset management FinTechs, performance must therefore be evaluated through a combination of financial, technological, regulatory, operational, and customer-related indicators, including portfolio performance, risk-adjusted return, transaction speed, system reliability, user satisfaction, accessibility, compliance, and market stability.

The organizational dimension is equally significant. The successful adoption of advanced asset management technologies depends on employee knowledge, managerial capability, organizational learning, and a supportive work environment. Evidence from an asset management company suggests that knowledge management and the work environment influence employee performance and organizational effectiveness [18]. In FinTech firms, where innovation cycles are rapid and technological complexity is high, knowledge-sharing mechanisms are essential for integrating financial expertise, software development, data science, cybersecurity, legal compliance, and customer service. A shortage of skilled human resources can limit the capacity of firms to design scalable platforms, assess new risks, and comply with changing regulations. Therefore, the development of asset management FinTechs requires investment in interdisciplinary education, professional certification, continuous learning, and collaboration among universities, financial institutions, technology firms, and regulatory bodies.

Standardization is another important foundation of effective asset management. The ISO 55000 series has promoted a structured approach to asset management by emphasizing value realization, leadership, risk-based planning, lifecycle management, performance evaluation, and continual improvement. Frameworks developed on the basis of ISO 55000 demonstrate that asset management should be treated as an integrated management system rather than as a collection of disconnected technical activities [19]. For financial asset management FinTechs, similar principles can support governance, documentation, accountability, process integration, and performance control. Although financial platforms operate in a different environment from industrial asset systems, the principles of strategic alignment, risk management, information integrity, and continuous improvement remain highly relevant.

Cross-industry collaboration can further strengthen asset management innovation. Integrated solutions for industrial asset management increasingly rely on cooperation among technology providers, regulators, service organizations, infrastructure operators, and research institutions [20]. Asset management FinTechs also require ecosystem-level collaboration because no single organization can independently provide all necessary capabilities. Financial institutions possess market knowledge and customer networks, technology firms provide digital infrastructure and analytical tools, regulators establish legal boundaries, universities contribute research and specialized talent, and investors determine market adoption. A fragmented ecosystem may result in duplicated investments, incompatible platforms, regulatory uncertainty, and limited scalability. By contrast, coordinated collaboration can facilitate standardization, data sharing, experimentation, and the diffusion of innovation.

The macroeconomic and institutional environment has a decisive influence on financial-market development. Shadow economic activity, weak transparency, informal transactions, and deficiencies in financial governance can negatively affect market performance and the banking sector [21]. Such conditions may reduce the quality of

financial information, weaken investor confidence, and complicate regulatory oversight. In addition, asset management FinTechs are sensitive to inflation, exchange-rate volatility, economic instability, restrictions on international financial transactions, and the existence of parallel markets. These factors shape investor behavior and may increase demand for speculative or short-term investment strategies. Therefore, any model for developing asset management FinTechs must incorporate macroeconomic constraints and the institutional realities of the target market.

The Iranian capital market provides a distinctive context for examining these issues. Iran has a relatively large, educated population, expanding digital-service usage, growing interest in online investment, and an established capital-market structure. At the same time, the market faces regulatory complexity, economic uncertainty, international sanctions, restricted access to global technologies and financial networks, uneven financial literacy, concerns regarding data security, and fluctuations in public trust. These conditions create both opportunities and constraints for WealthTech development. On the one hand, digital asset management platforms can improve access, reduce service costs, support financial inclusion, and provide investors with more sophisticated decision-making tools. On the other hand, insufficient regulation, fragmented data infrastructure, limited interoperability, cybersecurity risks, and weak consumer protection may reduce adoption and increase systemic vulnerability.

The insurance industry provides an example of how FinTech variables can be modeled within a sector characterized by information asymmetry, risk evaluation, and regulatory oversight [2]. Similar modeling is necessary in asset management because the development of FinTech solutions is influenced by multiple interacting variables, including technological readiness, customer demand, organizational capacity, supervisory independence, market competition, financial culture, and government support. A model that focuses only on technological infrastructure cannot adequately explain adoption, while a model limited to regulatory factors overlooks organizational and behavioral dynamics. Accordingly, a comprehensive framework must integrate causal conditions, contextual factors, intervening conditions, strategic responses, and expected consequences.

The impact of FinTech on bank risk-taking and profitability also illustrates the dual nature of financial innovation. FinTech can improve efficiency, diversify revenue, and strengthen competitiveness, but it can also encourage excessive risk-taking, operational dependence on technology, and exposure to cyber and model risks [1]. In asset management, automated systems may facilitate more disciplined portfolio decisions, yet poorly designed algorithms can amplify herd behavior, market volatility, or biased recommendations. This tension reinforces the need for a balanced regulatory approach that supports experimentation while protecting investors and maintaining market stability. Regulatory sandboxes, staged licensing, algorithmic audits, disclosure requirements, and cybersecurity standards may provide mechanisms for balancing innovation and control.

Despite the growing body of research on FinTech, artificial intelligence, blockchain, asset management systems, performance measurement, and digital platforms, the literature remains fragmented. Many studies examine a single technology, sector, or organizational function, whereas the development of asset management FinTechs requires a systemic perspective. Existing research has contributed valuable insights into information quality, artificial intelligence, Internet of Things applications, blockchain, performance measurement, standardization, financial innovation, and institutional conditions [7, 9, 10, 12]. However, fewer studies have integrated these dimensions into a unified model tailored to the institutional and behavioral characteristics of an emerging capital market.

This gap is particularly evident in Iran, where the development of WealthTech is shaped by the interaction of technological capability, legal processes, investor attitudes, sanctions, market structure, government intervention,

banking influence, financial literacy, and public trust. Although domestic studies have addressed asset management activities, Internet of Things applications, FinTech innovation, crowdfunding, and sectoral modeling, they do not provide a comprehensive validated framework for the development of asset management FinTechs in the Iranian capital market [5, 8, 14, 15]. In addition, the practical implementation of such a framework requires not only the identification of components but also the prioritization of those components and the clarification of their hierarchical relationships.

Accordingly, a mixed-methods approach is appropriate for this research problem because qualitative inquiry can reveal context-specific factors that may not be captured by predetermined models, while quantitative analysis can assess the reliability, validity, explanatory power, and predictive capacity of the resulting framework. The use of the Analytical Hierarchy Process can prioritize dimensions according to expert judgment, while Interpretive Structural Modeling can determine which factors operate as fundamental drivers and which emerge as dependent outcomes. This combination provides both theoretical explanation and practical guidance for policymakers, regulators, FinTech entrepreneurs, capital-market institutions, and investors.

The aim of the present study was to design and validate a comprehensive model for the development of asset management FinTechs in the Iranian capital market and to prioritize and structurally level its principal dimensions and components.

2. Methodology

In terms of purpose, the present study was applied-developmental, and in terms of research strategy, it adopted a sequential exploratory mixed-methods design. The implementation logic moved from qualitative exploration to quantitative validation. In the first phase, the model components and their relationships were extracted on the basis of experts' experiences. In the second phase, the resulting structure was examined in terms of reliability, validity, and predictive power. Subsequently, to transform the conceptual model into an implementation roadmap, the priorities and hierarchical levels of the components were determined using AHP and ISM.

The qualitative population consisted of managers and professionals working in capital market companies, managers of asset management FinTech firms, and academics familiar with financial technology. The inclusion criteria were possession of a professional certification or at least 10 years of relevant managerial and executive experience. Purposive sampling was employed, and semi-structured interviews continued until theoretical saturation was reached; saturation was achieved after 10 interviews. The main interview topics included barriers to entry, technical and legal infrastructures, investor behavior, the role of the government and regulatory authorities, development strategies, and expected outcomes. The interview transcripts were analyzed through three stages of open, axial, and selective coding. Member checking, peer review, and constant comparison of the data were used to enhance the credibility of the analysis.

Based on the codes obtained from the qualitative phase, a researcher-developed questionnaire was constructed using a five-point Likert scale. The quantitative population comprised the same network of professionals and managers associated with the capital market and FinTech sector. Based on the Krejcie and Morgan table, 169 questionnaires were distributed. The data were analyzed using SPSS version 26 and SmartPLS version 3. Reliability was assessed through Cronbach's alpha and composite reliability, convergent validity through average variance extracted, and discriminant validity through the Fornell–Larcker criterion. R^2 and Q^2 were used to evaluate the structural model.

To prioritize the dimensions and components, a pairwise-comparison questionnaire was administered to 10 experts, and their judgments were aggregated using the geometric mean. The final weights of the criteria were calculated through the Analytical Hierarchy Process. Subsequently, the same group of experts evaluated the influence relationships among the dimensions. By constructing the Structural Self-Interaction Matrix, the reachability matrix, and the reachability and antecedent sets, the levels of the ISM model were determined. This phase established the logical sequence of interventions, ranging from fundamental factors to dependent outcomes.

3. Findings and Results

The coding of the data resulted in the identification of 33 categories across the six dimensions of the paradigmatic model. The central phenomenon was "the development of asset management FinTechs in the Iranian capital market." The causal conditions primarily referred to structural barriers, education, legal and technical processes, investor behavior, and the role of the government and banks. The contextual conditions encompassed support capacities, human capital, access to markets and information, and public awareness. The intervening conditions included sanctions, parallel markets, risk perceptions, the limited number of market participants, internet speed, and economic and FinTech maturity. The strategies were technological, regulatory, cultural, and market-building in nature, while the consequences were related to market stability, service speed and intelligence, risk management, and public satisfaction.

Table 1. Dimensions and Components of the Grounded Theory-Based Model

Paradigmatic Dimension	Main Components
Causal conditions	Barriers and challenges to entry; education and development of financial and technological skills; development of legal and technical processes; investors; societal development challenges and reforms; the influence of the government and banks on the capital market and public trust
Central phenomenon	Development of asset management FinTechs in the Iranian capital market
Contextual conditions	Attraction of financial sponsors; educated population; easy access to investment markets; use of companies' historical information; government support; enhancement of public awareness through interactive tools; various forms of support
Intervening conditions	Sanctions and parallel markets; unfavorable attitudes toward investment and risk; number of FinTech professionals and companies; internet speed; economic and FinTech maturity
Strategies	Widespread adoption of technology and FinTech growth; supportive and supervisory measures; enhancement of educational attainment and financial culture; decision-making tools; independence of the regulatory authority; multifunctional financial platforms; capital market expansion and appropriate promotion
Consequences	Increased wealth and public satisfaction; proper implementation of financial regulations; risk management and cloud-based financial processing; multichannel services; intelligent commercial services; increased service delivery speed; capital market stability

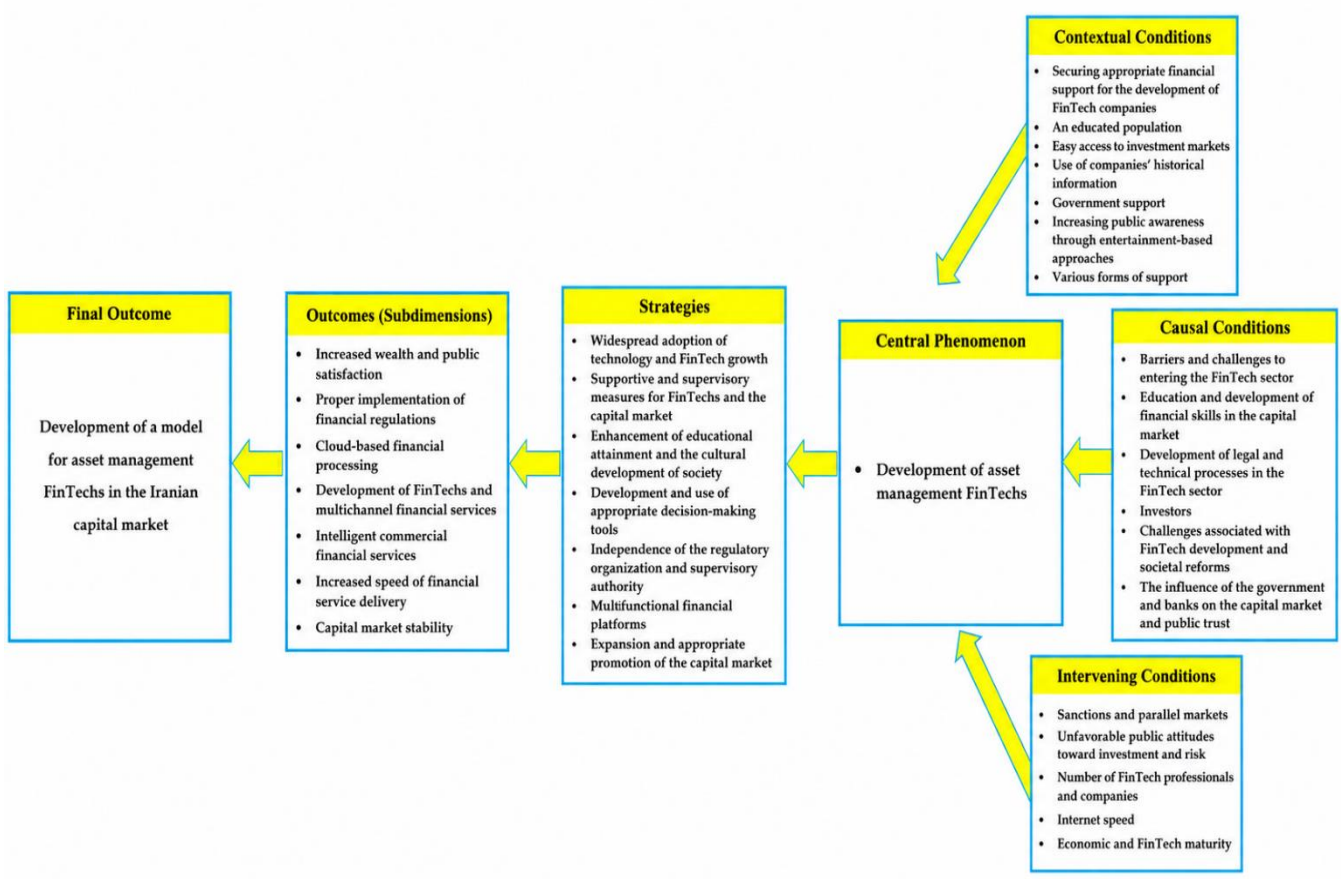

Figure 1. Paradigmatic model for the development of asset management FinTechs

The measurement model results indicated that all constructs had satisfactory reliability. Cronbach's alpha ranged from 0.780 for causal conditions to 0.910 for contextual conditions, and all composite reliability values exceeded the threshold of 0.70. The average variance extracted for most constructs was greater than 0.50. The AVE value for causal conditions was 0.489, which was close to the recommended threshold. Given its satisfactory composite reliability and acceptable factor loadings, this construct was retained in the model. Examination of the Fornell–Larcker matrix also confirmed the discriminant validity of the constructs.

Table 2. Reliability and Convergent Validity Indices of the Constructs

Construct	Cronbach's Alpha	Composite Reliability	AVE
Causal conditions	0.780	0.846	0.489
Intervening conditions	0.858	0.900	0.647
Central phenomenon	0.890	0.921	0.703
Consequences	0.860	0.890	0.544
Strategies	0.882	0.908	0.587
Contextual conditions	0.910	0.931	0.662

The R^2 values indicated that the model explained 67.1% of the variance in the central phenomenon, 70.0% of the variance in strategies, and 50.9% of the variance in consequences. The Q^2 value for the central phenomenon was 0.370, indicating strong predictive power. The corresponding values for strategies and consequences were 0.243 and 0.141, respectively. Therefore, the model demonstrated moderate predictive power for strategies and predictive power approaching the moderate level for consequences. Taken together, these indices confirmed the acceptable quality of the structural model.

Table 3. Explanatory and Predictive Power Indices of the Model

Endogenous Variable	R^2	Q^2	Interpretation
Central phenomenon	0.671	0.370	Strong explanatory and predictive power
Strategies	0.700	0.243	Strong explanatory power and moderate predictive power
Consequences	0.509	0.141	Moderate explanatory power and predictive power approaching a moderate level

The AHP results indicated that consequences had the highest priority, with a weight of 0.3641. Strategies and contextual conditions ranked next, with weights of 0.2243 and 0.1704, respectively. This ordering suggests that experts assessed the value of FinTech development on the basis of its tangible outcomes, while considering the achievement of these outcomes to be dependent on implementation strategies and an appropriate institutional context. At the subcomponent level, "barriers and challenges to entry" was identified as the most important component of causal conditions, "attraction of financial sponsors" as the most important contextual component, "sanctions and parallel markets" as the most important intervening factor, "widespread adoption of technology and FinTech growth" as the most important strategy, and "capital market stability" as the most important consequence.

Table 4. Prioritization of the Main Model Dimensions Based on AHP

Rank	Dimension	Final Weight
1	Consequences	0.3641
2	Strategies	0.2243
3	Contextual conditions	0.1704
4	Central phenomenon	0.1101
5	Intervening conditions	0.0777
6	Causal conditions	0.0534

The ISM model revealed four levels. Causal conditions were positioned at the most fundamental level and played the strongest driving role. Contextual and intervening conditions were located at the next level, the central phenomenon and strategies at the third level, and consequences at the highest level of dependence. Therefore, reforms in the legal and technical environment, education, investor motivation, and the role of the government should be addressed before expecting the expansion of platforms and the achievement of market stability and satisfaction.

Table 5. Levels of the Interpretive Structural Model

Model Level	Dimensions	Predominant Role
Level 4: Fundamental	Causal conditions	Basic drivers and starting points of intervention
Level 3	Contextual and intervening conditions	Facilitating or constraining contexts
Level 2	Central phenomenon and strategies	Manifestation of development and implementation responses
Level 1: Final	Consequences	Outcomes dependent on the other layers

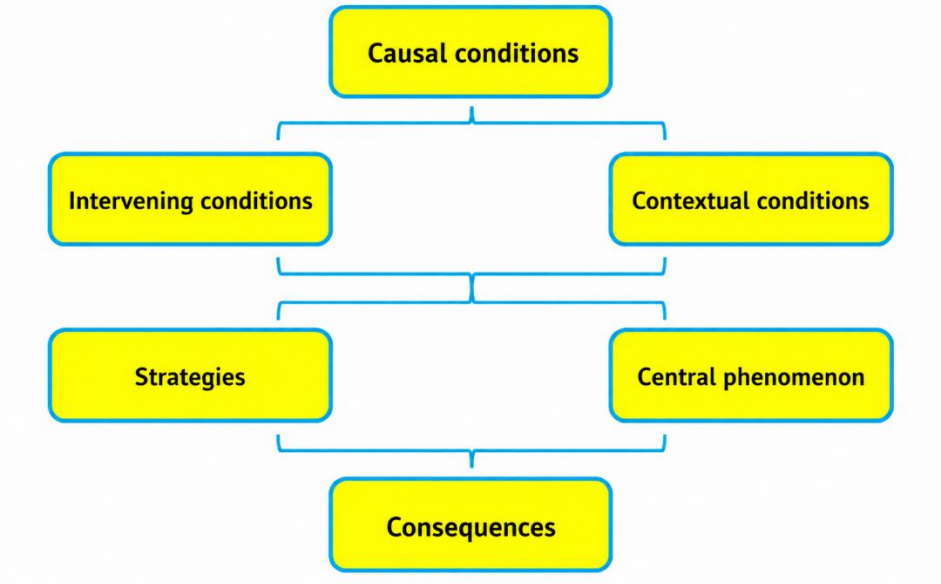

Figure 2. Hierarchical leveling of the model dimensions using ISM

4. Discussion and Conclusion

The present study was conducted to design and validate a model for the development of asset management FinTechs in the Iranian capital market. The qualitative findings identified 33 categories organized within six dimensions: causal conditions, the central phenomenon, contextual conditions, intervening conditions, strategies, and consequences. The quantitative findings confirmed the satisfactory reliability and validity of the proposed constructs, while the structural model demonstrated strong explanatory power for the central phenomenon and strategies and moderate explanatory power for the consequences. The AHP results placed consequences at the highest level of priority, followed by strategies and contextual conditions, whereas the ISM analysis positioned causal conditions at the most fundamental level of the model and consequences at the final and most dependent level. Taken together, these findings indicate that the development of asset management FinTechs is not the result of a single technological intervention. Rather, it emerges from the interaction of regulatory, technological, informational, organizational, behavioral, economic, and institutional factors.

The identification of structural barriers, education, legal and technical processes, investor-related factors, societal reform requirements, and the influence of government and banks as causal conditions indicates that the expansion of asset management FinTechs depends on the quality of the broader financial ecosystem. This result is consistent with research emphasizing that asset management systems require integrated governance arrangements, transparent processes, adequate institutional support, and clearly defined decision-making responsibilities [4, 5]. The finding also suggests that the absence of clear regulations, weaknesses in technical standards, limited access to data, and insufficient investor preparedness may inhibit the entry and growth of FinTech firms even when the underlying technological capacity exists. The importance attributed to government and banks is particularly understandable in the Iranian capital market, where regulatory institutions and conventional financial intermediaries continue to exert substantial influence over licensing, access to payment infrastructures, data availability, and public confidence. Therefore, the development of WealthTech requires the transition from fragmented and institution-centered regulation toward a coordinated ecosystem-based approach.

The significance of education and the development of financial and technological skills among the causal conditions further demonstrates that human capital is a prerequisite for successful FinTech adoption. Asset management platforms require professionals capable of combining financial analysis, data science, software development, cybersecurity, compliance, and customer relationship management. Research has shown that knowledge management and a supportive work environment influence employee performance in asset management organizations, particularly where employees must continuously update their capabilities and exchange specialized knowledge [18]. Similarly, studies on Internet of Things-based asset management emphasize that the benefits of connected technologies cannot be realized without managerial understanding, technical competence, and an organizational capacity to transform data into decisions [8, 9]. The present findings therefore reinforce the argument that technological investment should be accompanied by interdisciplinary training, professional certification, investor education, and institutional learning mechanisms.

The central phenomenon identified in the study was the development of asset management FinTechs in the Iranian capital market. The relatively high R^2 value of 0.671 indicates that the causal, contextual, and intervening factors included in the model explain a substantial proportion of the variance in this phenomenon. This finding supports the multidimensional conceptualization of FinTech development. Asset management FinTechs are not merely digital interfaces for investment services; they represent a convergence of portfolio theory, automated advisory systems, artificial intelligence, data analytics, and digital financial intermediation. Modern portfolio management increasingly depends on the integration of diversification principles with real-time data, risk measurement, and computational optimization [3]. Moreover, the growth of blockchain-based financial management and artificial intelligence-based computing technologies indicates that asset management platforms are moving toward highly automated, data-intensive, and interconnected operating models [13]. Consequently, the development of such platforms requires the simultaneous maturation of technology, regulation, human resources, and market demand.

The contextual conditions identified in the study included financial support, an educated population, easy access to investment markets, use of companies' historical information, government support, enhancement of public awareness, and multiple forms of institutional assistance. The high reliability of this construct and its third-place ranking in the AHP analysis indicate that experts considered the surrounding environment essential to the implementation of the model. This result aligns with evidence showing that information quality is a core dimension of effective asset management because investment, monitoring, and risk-control decisions depend on accurate, timely, and integrated information [7]. In addition, studies on integrated asset management solutions emphasize the importance of collaboration among technology providers, regulators, financial organizations, and research institutions [20]. In the Iranian context, the availability of historical corporate data, access to market infrastructures, and institutional support can reduce uncertainty and enable FinTech firms to develop more accurate analytical and advisory tools.

The importance of attracting financial sponsors also reflects the capital-intensive nature of FinTech development. Asset management platforms require sustained investment in software architecture, cybersecurity, cloud infrastructure, data acquisition, algorithm development, licensing, and customer acquisition. This finding is consistent with studies showing that FinTech and crowdfunding platforms can improve access to financing and broaden the range of available financial resources, particularly for small and medium-sized enterprises and innovative firms [14]. However, financial support alone is insufficient. The effective use of capital depends on organizational capability, governance quality, and the availability of skilled personnel. The current results therefore

suggest that support programs should combine financing with technical mentoring, regulatory guidance, access to data, and opportunities for collaboration with established financial institutions.

The intervening conditions included sanctions and parallel markets, unfavorable attitudes toward investment and risk, the limited number of FinTech actors, internet speed, and the maturity of the economy and FinTech ecosystem. Among these factors, sanctions and parallel markets received the highest priority. This finding is consistent with research indicating that shadow economic activity, financial informality, and weak transparency can adversely affect financial-market performance and the banking sector [21]. In environments characterized by exchange-rate instability, limited international connectivity, and strong parallel markets, investors may prioritize short-term speculative behavior over long-term portfolio management. Such conditions can reduce the effectiveness of digital wealth-management services and complicate the use of international technologies, payment systems, and data sources. The findings therefore indicate that asset management FinTechs in Iran must be designed with resilience to macroeconomic volatility, restricted international access, and heterogeneous investor behavior.

The identification of internet speed as an intervening factor highlights the dependence of FinTech services on reliable digital infrastructure. Automated portfolio monitoring, real-time alerts, algorithmic transactions, cloud-based processing, and multichannel customer services require stable and secure connectivity. Research on artificial intelligence in asset management has similarly emphasized that the effectiveness of machine-learning applications depends on data accessibility, computational infrastructure, interoperability, and system reliability [10, 11]. The same principle applies to blockchain and digital asset management, where latency, scalability, cybersecurity, and network integration are critical to operational performance [12]. Accordingly, infrastructure limitations should be regarded not as peripheral technical issues but as strategic constraints on the scalability and credibility of FinTech platforms.

The strategies identified in the study included the widespread adoption of technology, supportive and supervisory measures, enhancement of educational attainment and financial culture, development of decision-making tools, independence of the regulatory authority, multifunctional financial platforms, and appropriate capital-market promotion. The model explained 70% of the variance in strategies, indicating strong explanatory power. The high priority assigned to technological diffusion and FinTech growth reflects the importance of creating an innovation-friendly ecosystem. This finding is compatible with evidence that FinTech-based innovation can transform organizational processes and contribute to broader strategic objectives, including green finance and sustainable organizational change [15]. It is also consistent with research on FinTech modeling in the insurance industry, which shows that sectoral development depends on the interaction of technological, organizational, customer-related, and regulatory variables [2].

The emphasis on supportive and supervisory measures indicates that regulation should perform both enabling and protective functions. Excessively restrictive regulation may discourage innovation, whereas weak regulation may expose investors to fraud, cyber risk, biased algorithms, and unsuitable financial products. Research on the effects of FinTech on bank profitability and risk-taking demonstrates that financial innovation may improve efficiency and competitiveness while simultaneously encouraging new forms of risk exposure [1]. Therefore, regulatory sandboxes, staged licensing, algorithmic auditing, cybersecurity standards, disclosure requirements, and client-asset protection mechanisms may be particularly appropriate for the development of asset management FinTechs. The finding concerning the independence of the regulatory authority also suggests that supervisory credibility and freedom from conflicting institutional interests are necessary to strengthen public trust.

The strategy of developing multifunctional financial platforms reflects the movement from single-service applications toward integrated ecosystems. Such platforms can combine investment analysis, portfolio management, financial education, risk assessment, reporting, payment services, and access to multiple financial instruments. Blockchain-based and metaverse-related studies similarly suggest that digital asset management is evolving toward interoperable platforms that integrate identity, ownership, transactions, and analytics [12]. Nevertheless, multifunctionality increases technological and regulatory complexity. Platform design must therefore be based on modular architecture, data protection, user-centered interfaces, clear accountability, and compatibility with existing market infrastructures.

The consequences identified in the study included increased wealth and public satisfaction, proper implementation of financial regulations, cloud-based financial processing, multichannel services, intelligent commercial financial services, increased service speed, and capital-market stability. The AHP results placed consequences first, with a weight of 0.3641, indicating that experts evaluated the development of FinTechs primarily through their tangible economic and service-related outcomes. This result is consistent with the broader asset-management literature, which emphasizes that performance should be assessed in relation to value creation, service quality, resilience, risk, and stakeholder satisfaction rather than through narrowly defined technical indicators [16, 17]. In the case of WealthTech, platform success should therefore be evaluated through risk-adjusted investment outcomes, accessibility, customer satisfaction, processing speed, transparency, regulatory compliance, and contribution to market stability.

The moderate R^2 value of 0.509 for consequences suggests that approximately half of the variance in outcomes was explained by the model, while the remaining variance may depend on external macroeconomic and behavioral factors. This result is plausible because market stability, public wealth, and investor satisfaction are affected by inflation, political uncertainty, monetary policy, market volatility, and unexpected shocks that are not fully controllable by FinTech firms. The Q^2 value of 0.141 also indicated predictive power approaching the moderate level. Therefore, although the proposed strategies can contribute to desirable outcomes, they cannot entirely offset unfavorable macroeconomic conditions. This interpretation reinforces the importance of considering the asset management FinTech ecosystem as part of the broader financial and economic system.

The finding that proper implementation of financial regulations was an important consequence may initially appear to frame regulation as an outcome rather than a prerequisite. However, the result can be interpreted as indicating that technologically enabled platforms may improve regulatory implementation through automated compliance, transaction traceability, standardized reporting, and more effective monitoring. Frameworks based on the ISO 55000 series similarly emphasize that integrated management systems can strengthen accountability, documentation, risk control, and continuous improvement [19]. In financial markets, RegTech capabilities embedded in asset management platforms can facilitate customer identification, anti-money-laundering controls, suitability assessment, and audit trails. Thus, regulation influences FinTech development, but FinTech can also strengthen the operational implementation of regulation.

The importance of cloud-based processing, intelligent services, and increased service speed demonstrates the role of advanced technologies in enhancing efficiency. Bibliometric evidence from asset management systems in healthcare shows a growing movement toward digitalization, predictive analytics, integrated information systems, and intelligent decision support [6]. Similarly, systematic reviews of critical-utility asset management emphasize the growing use of digital tools to improve monitoring, risk assessment, and lifecycle decision-making [4]. The present findings extend these ideas to financial asset management and suggest that cloud and artificial intelligence

technologies can improve scalability and service personalization. However, their adoption must be accompanied by cybersecurity, data localization policies, business-continuity planning, and clear governance of automated decisions.

Finally, the ISM results clarified the hierarchical relationships among the model dimensions. Causal conditions were positioned at the most fundamental level, contextual and intervening conditions at the next level, the central phenomenon and strategies at the third level, and consequences at the final level. This structure shows that outcomes such as market stability, public satisfaction, and intelligent service delivery cannot be achieved directly. They depend on prior reforms in regulation, technology, education, investor preparedness, data infrastructure, and institutional support. The hierarchy is consistent with strategic asset management approaches that begin with governance and contextual assessment, proceed to the design and implementation of management processes, and ultimately evaluate value creation and service outcomes [16, 17]. Overall, the model provides a coherent explanation of how fundamental drivers are transformed through contextual mechanisms and strategic responses into observable outcomes in the Iranian capital market.

The present study had several limitations. First, the qualitative phase was based on 10 expert interviews, and although theoretical saturation was achieved, the views of retail investors, technology users, cybersecurity specialists, and policymakers may not have been represented to the same extent. Second, the quantitative sample consisted of professionals and managers associated with the capital market and FinTech sector; therefore, the findings may not fully reflect the perceptions of ordinary investors or individuals with limited financial literacy. Third, the cross-sectional design did not permit an examination of changes in the FinTech ecosystem over time. Fourth, some constructs, particularly consequences, may be influenced by macroeconomic and political factors outside the scope of the model. Finally, the use of expert judgment in AHP and ISM may introduce subjectivity despite the aggregation of judgments and the use of systematic analytical procedures.

Future studies should test the proposed model using larger and more diverse samples that include retail investors, institutional investors, FinTech employees, regulators, banking professionals, and technology providers. Longitudinal research could examine how the relationships among the model dimensions change as regulations, technologies, and investor behavior evolve. Comparative studies may also assess whether the proposed framework is applicable to other emerging capital markets or whether different institutional environments produce alternative hierarchical structures. Researchers should investigate the roles of cybersecurity, algorithmic transparency, data governance, digital trust, and financial inclusion as potential mediators or moderators. Experimental and quasi-experimental studies could also evaluate the effects of specific interventions, such as regulatory sandboxes, investor education programs, or artificial intelligence-based advisory tools, on platform adoption and investment outcomes.

Policymakers and capital-market regulators should establish a coordinated framework for licensing, supervising, and supporting asset management FinTechs while maintaining investor protection and market stability. Regulatory sandboxes, transparent licensing procedures, minimum cybersecurity standards, algorithmic accountability requirements, and clear rules for data sharing can reduce uncertainty and encourage responsible innovation. Capital-market institutions should improve the availability, quality, and interoperability of financial data and provide secure access mechanisms for qualified FinTech firms. Universities and professional organizations should develop interdisciplinary training programs covering finance, data science, artificial intelligence, cybersecurity, regulation, and digital product management. FinTech companies should prioritize user-centered design, financial education, transparent risk communication, modular platform architecture, and strong

data-protection practices. Public awareness campaigns should also be designed to improve financial literacy, reduce unrealistic investment expectations, and strengthen informed trust in digital asset management services.

Authors' Contributions

Authors equally contributed to this article.

Ethical Considerations

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

Acknowledgments

Authors thank all participants who participate in this study.

Conflict of Interest

The authors report no conflict of interest.

Funding/Financial Support

According to the authors, this article has no financial support.

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