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A Systematic Review of Futures Studies in the Banking Industry with an Emphasis on the Role of Artificial Intelligence

Rouhollah Sohrabi ^{a,*}

^a Department of Managant, Faculty of Economics and Social Sciences, Bu-Ali Sina University, Hamedan, Iran.

*. Corresponding Author's Email: r.sohrabi@basu.ac.ir

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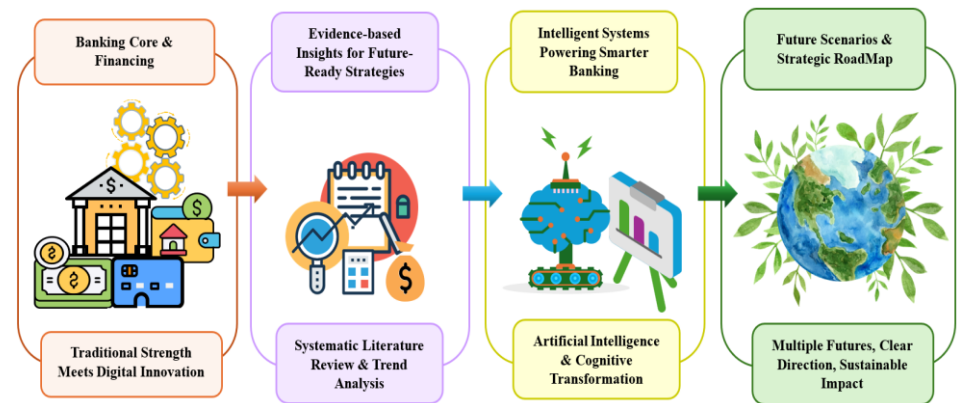
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ABSTRACT

The banking industry is one of the most crucial industries in any country, undertaking the financing of both micro and macro projects. The management approach within this industry has evolved, and new methodologies are being adopted. Furthermore, banks' perspective toward their customers has undergone significant transformation. Evidently, any form of strategic planning, roadmap formulation for the future of the banking industry, and even the development of operational plans for banking units necessitates a thorough and precise understanding of the banking industry. Not only senior bank executives but also lower-level experts—such as software developers in IT departments or those drafting various guidelines in credit and financial domains—cannot adequately anticipate the bank's long-term needs or advance their programs with a future-oriented perspective without a clear understanding of the industry's future landscape and the corresponding roadmap of banks. For this reason, futures studies, as an interdisciplinary field that analyzes trends, anticipates changes, and presents plausible future scenarios, has become an indispensable tool for dynamic industries, including banking. Given the pressing need to understand the future of the banking industry, this study conducts a systematic review of the existing literature on futures studies in the banking sector, with a particular focus on the role of artificial intelligence.



1. Introduction

The banking sector plays a fundamental role in the fabric of the global economy and the economic development of a nation. Banking, as one of the pillars of the modern economy, is being influenced by the swiftest technological, economic, and social changes. Modern tools such as artificial intelligence, blockchain, fintechs, and shifts in customer behavior have dramatically transformed the future of this industry. An efficient banking system underpins the effective allocation and management of funds and financial investments, thereby reinforcing the country's economic architecture (Isaias, 2022). On the other hand, instability in the banking sector can adversely affect economic expansion (Safiullah & Paramati, 2022; Traune, 2024). Changes in key long-term environmental factors have compelled the banking industry to embrace transformation in the competitive arena. Hence, banks can, through studying and forecasting future changes and developments, align their competitive position with these transformations by leveraging foresight knowledge. In this

regard, futures studies can serve as an appropriate tool for predicting and examining key trends and presenting innovative strategies in this domain. Foresight knowledge must be planned as a learning process within strategic activities and managerial decision-making under conditions of uncertainty, empowering managers in turbulent situations and enabling them to respond proactively to environmental threats (Rashid Ardah et al., 2016). Foresight has always been a concern for banking industry managers in the realm of strategic management, and the fundamental question is how senior executives can make reasonable use of this important capability. Given that the external environment of this industry is constantly changing, and the direct impact of these changes and their strategic implications on managers is evident, while simultaneously the future conditions cannot be easily predicted, the utilization of foresight can partially address these deficiencies and shortcomings (Nasrollahi Saeedlou, 2023). Therefore, the present research undertakes a systematic review of futures studies in the banking industry.

2. Methods

2.1. Theoretical Foundations

In today's complex and dynamic world, the banking industry faces profound changes in economic, technological, and social environments. The emergence of new technologies, digital transformations, and shifts in customer expectations have compelled banks to adapt to these developments and chart a sustainable and successful future for themselves. Futures studies in banking, as a scientific and strategic approach, enable banks to identify forthcoming trends, opportunities, and threats, and to design their long-term strategies based on data and rigorous analysis.

The importance of futures studies in banking lies not only in predicting economic and technological trends but also in understanding cultural, social, and environmental changes. This approach helps banks, through identifying and analyzing various scenarios, not only to overcome upcoming challenges but also to play a role as innovative pioneers in providing financial services to society.

In today's world, key trends such as the digitalization of services, the rise of fintechs, the growing influence of artificial intelligence and big data in finance-making, as well as changes in financial laws and regulations, compel banks to redefine their role. Futures studies enable banks to make more informed decisions by identifying strengths and weaknesses, opportunities and threats, and conducting in-depth analyses of possible scenarios, thereby paving their path toward progress.

Furthermore, intense competition in the financial industry, rising customer expectations for customized and rapid services, and pressure to reduce costs have driven banks toward innovation and change. Futures studies can act as a guiding light, assisting banks in navigating rapid changes and helping them design innovative, customer-centric products and services. Ultimately, futures studies offer banks the opportunity not only to react to changes but also to act as agents of transformation and assume a leading role in shaping the future of the financial industry. This introduction provides a foundation for deeper analysis of the opportunities and challenges facing banks in the new era.

Accordingly, futures studies in the banking industry can be examined across three domains:

- Emerging Technologies in the Future of Banking

Emerging technologies have entered the banking industry at a remarkable pace over the past decades. One of the first technological revolutions in banking was the introduction of Automated Teller Machines (ATMs) in the 1970s, which provided a solution for easier access to financial services. Subsequently, in the 1990s, internet banking emerged, enabling customers to access their accounts remotely. In recent years, emerging technologies have had a profound impact on the banking industry, and this trend is expected to continue at an accelerated pace in the future. Technologies such as Artificial Intelligence (AI), Machine Learning (ML), Big Data, Blockchain, and the Internet of Things (IoT) are key tools for transforming banking processes and service delivery. AI can optimize data analysis to identify customer behavior and provide personalized services. Entering the 2000s, technologies related to big data and advanced analytics enabled banks to analyze customer behavior and offer tailored services. Modern technologies such as AI, blockchain, and IoT have a significant impact on improving bank performance and optimizing their internal processes. These technologies can lead to cost reduction, increased speed, and enhanced quality of services provided to customers. In the 2010s, the emergence of blockchain and digital currencies like Bitcoin introduced the concept of decentralized transactions into the banking arena. Today, banks are leveraging AI, machine learning, and IoT to deliver smarter, faster, and more secure services. Blockchain, owing to its high security features and the ability to enable decentralized transactions, can fundamentally transform the infrastructure of banking systems. On the other hand, the use of IoT in areas such as mobile banking and smart payment devices has made it easier for customers to access financial services. These technologies enable banks to operate more efficiently, transparently, and customer-centrally. However, their adoption and implementation require substantial investment and fundamental changes in the banks' structure.

Technological evolution in the banking industry has been continuously advancing since past decades. In the 1980s, the first signs of open banking emerged in Germany when the German Federal Post Office displayed the banking data of 2,000 customers using several monitors outside the physical environment of the bank branch. This experience demonstrated that it is feasible to display and utilize customer data outside the bank's premises.

- The Role of Human Capital in the Future of Banking

Despite remarkable technological advancements, human capital will remain a cornerstone of banking. In the past, banks, as service-oriented institutions, were heavily dependent on the performance of their employees. Over time and with technological progress, although many processes have become automated, the importance of human capital in delivering quality services and managing customer relationships remains prominent. While technology can streamline many repetitive tasks and complex processes, the need for human skills in areas such as customer relationship management, strategic decision-making, and

fostering innovation persists. The role of human capital in banking has been a fundamental pillar of this industry since its inception. In traditional banking, human interactions, whether in service delivery to customers or in internal management, played a dominant role. With technological advancement, part of the employees' repetitive tasks was replaced by automated and digital systems. However, simultaneously, the demand for specialized human capital in data analytics, cybersecurity, and emerging technology management increased. From the 1980s onward, with the advent of digital banking, employee training and empowerment became a priority for banks. Today, the focus is more on developing soft skills (such as effective communication and creativity) and specialized skills (such as data management and technology).

In the future, the role of human capital will increasingly shift toward specialized and strategic positions. Bank employees will require skills such as data analysis, change management, and the ability to collaborate with modern technologies. Continuous training and empowerment of the workforce are essential for adapting to changes. At the same time, the importance of human factors such as building trust, empathy, and the ability to establish effective relationships with customers remains an aspect that cannot be entirely delegated to technology. Human resource development and employee empowerment are effective tools for enhancing productivity and optimally utilizing individual and collective capacities and abilities in alignment with organizational goals. Studies indicate that identifying, developing, and retaining talented human capital—as the bank's most important asset and a sustainable source of competitive advantage—plays an influential role in institutionalizing competitiveness indicators for banks and leads to ensuring customer satisfaction and loyalty.

- Operational Challenges in the Future of Banking

The banking industry has always faced numerous operational challenges. In the past, these challenges were mostly limited to managing financial resources, delivering services to customers, and complying with regulations. With technological advancement and changes in customer needs and the digitalization of services, new challenges such as cybersecurity, big data management, and the need for continuous innovation have emerged. In the 1990s and early 2000s, the rise of internet banking brought a new wave of security threats, including hacking, phishing, and malware. Additionally, with the increasing complexity of financial laws and regulations, banks faced greater challenges in complying with legal requirements. Today, in addition to security, environmental issues, social and economic changes, and the pace of technological change are emerging as new challenges.

One of the most significant of these challenges is cybersecurity. With the expanding use of digital technologies, security threats and data privacy risks have escalated, and banks must make substantial investments to counter these threats. Another challenge is managing costs while maintaining service quality. While new technologies can optimize processes, the initial investment in these technologies is often costly. Furthermore, new regulatory frameworks and supervisory mechanisms, which evolve alongside technological advancements, require banks to adapt to new compliance structures. This can be particularly challenging for smaller banks. Overall, to overcome these challenges, banks need intelligent, forward-looking strategies that strike a balance between embracing innovation and maintaining operational stability.

With the adoption of modern technologies in banking, challenges such as the rise in cybercrime have also emerged. Banks must confront these challenges and provide solutions to mitigate risks and enhance security.

Operational challenges have always been an inseparable part of the banking industry. In the past, these challenges primarily involved cash management, customer relations, and account security. With the advent of digital technologies, the nature of challenges shifted, and cybersecurity became a major concern.

Today, with the emergence of advanced technologies, banks must improve their services, respond to new customer needs, and provide them with an unparalleled experience. In general, to succeed in today's dynamic environment, banks need to adapt to technological changes, invest in human capital development, and effectively manage operational challenges.

3. Results and Discussion

3.1. Literature Review

Maleki et al. (2024) investigated the role of big data in the future of the banking industry using a scenario-planning approach. The findings indicated that two factors—"technology regulation" and "technology transfer costs"—serve as key uncertainties for developing research scenarios. Furthermore, according to the research findings, considering drivers, key uncertainties, and alternative scenarios by managers and decision-makers can improve bank performance and enhance competitive advantage.

Vaezpour (2024), through a review of analytical scenarios for the future of Iranian banking, emphasized the impact of banking drivers with a focus on financial technology (fintech). The results showed that fintech integration, the growth of banking startups, and changes in banking service delivery are among the influential factors. This study demonstrated that fintech adoption models, the degree of compatibility of data-driven technologies with banking structures,

employee expertise and skills in data-driven technologies, and banks' attitudes toward fintechs are among the effective factors in the future of banking.

Arabi et al. (2023), in identifying and prioritizing the drivers of technology-driven banking futures, evaluated the extracted drivers through screening questionnaires and the fuzzy Delphi method. Based on COPRAS method scores, the priority drivers were: fintech adoption models in the banking industry, the degree of compatibility of data-driven technologies with banking structures and systems, the level of employee expertise and skills in data-driven technologies, and banks' attitudes toward fintechs.

Nasrollahi Saeedlou et al. (2023) conducted a study titled "Predicting the Future State of the Banking Industry in Iran Based on a Futures Studies Approach for Keshavarzi Bank" using the snowball sampling method. In this research, the most important key factors affecting the industry's future were selected using the fuzzy analytic hierarchy process (FAHP). Subsequently, through cross-impact matrix analysis, the nature and manner of each factor's influence on the banking industry were determined, and the balance of cross-effects method was employed for scenario writing. The results led to the identification of optimistic scenarios for the bank, banking industry transformation, inflationary conditions, and sanctions. These four scenarios enabled strategic and operational planning for the bank based on analyzing the uncertainties facing each scenario.

Takhtaei et al. (2023) conducted a documentary and library-based study titled "Fintech and the Future of Banking," in which the authors sought to examine financial technologies and the future of banking. In preparing this work, precise and authoritative scientific sources, including domestic databases, were utilized. The results indicate how banks, as traditional players in this industry, should deal with these newcomers, thereby determining who the true winner will be. Banks can adopt various interaction methods with this emerging phenomenon, such as investment, partnership, and so forth.

Shahbazi Ghiasi et al. (2023), in a study employing documentary methods and expert questionnaires, presented a process model for environmental monitoring and scanning in banks to optimally face the future of the banking industry. Based on the research results, a validated process model comprising four main processes—finding, analysis, framing, and application—was proposed. This model can be utilized for understanding, analyzing, and appropriate planning to confront the future of the banking industry within the country's banking network.

Moumivand et al. (2022) presented a framework for identifying drivers affecting the future of the banking industry with an emphasis on the role of fintech, employing both qualitative (meta-synthesis) and quantitative (fuzzy best-worst) methods for data analysis. The results indicated that the drivers of integration and uniformity of laws and standards for fintech activity development, growth of banking startups, changing preferences of new generations regarding banking services, and the performance of technology parks and incubators in accelerating the entry of innovation into the business environment had the highest priority.

Arza et al. (2021) investigated futures studies of Iran's banking industry with an emphasis on digital transformation using trend analysis, including retrospective analysis through in-depth library studies. Based on the research methodology, three areas—laws and regulations, international sanctions, and digital transformation—were identified as macro factors affecting the banking industry in Iran. In the event of the removal of international sanctions and connection with the international banking system, along with legal and regulatory reforms and banking system overhaul, complete digital transformation and profitability for banks are conceivable. If neither of the above two conditions materializes, the provision of traditional banking services through third-party platforms will continue, and banks' accumulated losses will increase. If one of the two factors occurs, the digital transformation framework will be implemented incompletely, which could be somewhat effective in reducing banks' accumulated losses and rendering their operating income positive.

Kushesh Kordshouli (2021) examined futures studies of fintech in Iran using a scenario-planning approach, employing the binomial statistical test and the IDAS technique for data analysis. The findings indicated that based on two drivers, four scenarios for the future of fintech in Iran were identified: Fintech Paradise, Oppressive World, Deserted Island, and Fintech Hell. Fintech Paradise describes the most favorable scenario, while Fintech Hell depicts the worst.

Bekamiri et al. (2021), in a study, examined foresight in the banking industry using scenario-writing and cross-impact matrix approaches. Based on this research, four scenarios—optimistic for the bank, banking industry transformation, inflationary conditions, and sanctions—were identified to enable strategic and operational planning for Keshavarzi Bank based on analyzing the uncertainties ahead.

Moradi et al. (2021), in a study, conducted foresight on Iran's banking industry with an emphasis on the role of fintech startups toward the 2025 horizon (1404). In terms of purpose, the research was applied, and methodologically, due to the use of foresight methods, it was of a sequential-exploratory type. Based on morphological analysis, out of 41 possible scenarios, 5 scenarios remained, and

the others were eliminated. The five scenarios were: "Fintech Heaven in the Banking System," "Fintech Exodus," "Crucified Fintechs," "Resistance Fintechs," and "Evolving Fintechs." According to expert opinion, the "Fintech Heaven in the Banking System" scenario was identified as the desirable scenario for the 1404 horizon.

Bayramzadeh et al. (2019) employed the GBN (Schwartz) method to explore future scenarios of electronic banking in Iran. For this purpose, 17 open interviews were first conducted with banking and information technology experts in the country. After categorization and extraction of nine uncertainties, three key certainties—sanctions, proactive banking legislation, and proactive technology legislation—were selected. Based on the key uncertainties, eight scenarios were derived, among which six probable scenarios were selected and their spaces and related policies were described. The explored scenarios included: Gradual Death of a Dream, Ray of Hope, Monetary Revolution, Policy Maker Intelligence, Paradise, and Commercial Prosperity.

Shamshiri et al. (2019) examined futures studies of the banking industry using a scenario-writing approach. The findings of this research indicated that by identifying driving forces, 64 variables as primary factors affecting the banking industry were presented to experts in a 64×64 matrix. Subsequently, with the assistance of MicMac software, 12 key factors were extracted and classified into 38 different states. These states for all key factors were then presented to specialists in a 38×38 matrix and analyzed in Scenario Wizard software, resulting in the extraction of four scenarios.

Ali Hosseini et al. (2019) identified trends and future scenarios of Iran's banking system. To this end, utilizing the Schwartz model in scenario writing and a mixed-method approach in research methodology (combining library studies, expert interviews, panel, and Delphi), the future of the banking system was systematically examined. The analysis of four scenarios indicates that the banking system suffers from structural problems, including non-compliance with financial standards and legal weaknesses, and is exposed to crisis regardless of sanctions.

Rashid Ardah et al. (2017), in a study titled "The Future Ahead of Iran's Banking Industry with a Scenario-Planning Approach," employed two foresight methods—cross-impact analysis (Balancing) and scenario planning, along with MicMac software—to first identify strategic factors affecting the future of the banking industry and then examine and analyze the major scenarios facing the industry. The results of applying the cross-impact analysis method indicated that 10 key factors—profitability, sources and uses of funds, government and economy, interest and legal reserve, non-performing loans, capital adequacy, sanctions, laws and regulations, mandatory facilities, and the economic environment—among the identified factors would have the greatest influence and impact on the future of the banking industry.

Traune et al. (2024) conducted a systematic review of fintech and bank profitability. This research provides a systematic review of contemporary literature, identifying important fintech metrics that affect bank profitability and the primary factors influencing this profit. The findings indicate that fintech operates at both the bank and country levels, and profitability determinants include both bank-specific and country-specific variables. The study employed the theory, context, constructs, and methods (TCCM) framework to chart a path for future research, offering academics, banking professionals, and policymakers an accurate understanding of the linkage between fintech and bank profitability.

Masud Rahman (2024) systematically examined blockchain in the banking industry. This comprehensive review reveals significant trends in article performance, author contributions, country contributions, journal impact, and thematic focus within the field of blockchain research in banking. Among the key related clusters, the authors extracted four themes/clusters, including transforming the banking sector through fintech innovation, blockchain and artificial intelligence: the future of supply chain management, decentralized finance, and Industry 4.0 digitalizing the financial industry.

Smith (2024) conducted a review of the impact of artificial intelligence on the future of banking and how to achieve a smooth transition. Undoubtedly, AI will continue to significantly assist in how banks conduct business in the future. To remain competitive, banks must introduce this technology and continuously deepen its application. However, an initial proper understanding of the potential benefits, challenges, and critical implementation milestones is essential to achieving desired success from its implementation. Based on a review of the literature, this paper examines the benefits and barriers of using AI technology in the banking industry and recommends critical success factors for its implementation.

Liu (2024), in fintech research, conducted systematic mapping, classification, and identification of future directions. This study provides systematic mapping, a comprehensive review of current fintech publications, analysis of the current state, maturity level, and future directions of fintech research. Fintech and banking, fintech development, and fintech adoption are the most popular research areas, with articles in these fields increasing. This paper provides a unique perspective on the subject, enabling researchers and practitioners to reassess the direction and scope of future fintech research.

Ulrich-Diener et al. (2023) examined the future of banking: the real barriers to bank digitalization. In this context, innovative competitors, namely fintechs, challenge banks and force them to rethink their existing strategies and structures. In this paper, 407 representatives of German banks were surveyed to identify, quantify, and analyze implementation barriers in the context of bank digitalization from the decision-makers' perspective. Using structural equation modeling, the authors quantified various types of barriers and tested their impact on the degree of digitalization in banks. These findings enhance bank practitioners' understanding and awareness of digitalization barriers and contribute to the field of bank digitalization.

Maja et al. (2022) examined and analyzed big data to support a data-driven technology roadmap for the future bank. As banks seek more ways to leverage product trends, market dynamics, customer behavior, and emerging technologies through analytics, this study provides insights for developing a data-driven Technology Roadmap (TRM) for the future bank using Big Data Analytics (BDA). The study results confirm that the roadmap principles for the future bank, based on the proposed framework, include data literacy, data governance, and culture as the foundation for being data-driven. Additionally, these principles include incorporating domain expertise to train or refine data models and eliminate bias.

Broby (2021) examined fintech and the future of banking using an analytical framework within classical banking theory and digital transformation literature. By extending the theory of the banking firm, he demonstrates how financial intermediation is affected by innovative fintech applications. This research contributes to understanding the future of banking and provides a framework for empirical scientific inquiry, proposing four possible strategies for market participants: (1) customer retention, (2) customer acquisition, (3) banking as a service, and (4) social media payment platforms. The results indicate that in an increasingly digital world, trust will remain at the core of banking, but liquidity

transformation will continue to play an important role, and the nature of banking and financial services will change dramatically.

Gucci (2020) examined the future of the banking industry in the era of digital transformation, aiming to identify digital transformation in the banking sector and determine what banks and fintech companies are doing in the market. The study concluded that there is intense competition between fintech startups and traditional banks, but on the other hand, there is also room for collaboration between them. Banks and fintechs must collaborate with other ecosystem players through the adoption of open banking, which is the future of the banking industry.

Jaksič (2015), in a study, analyzed the future of banking and the role of information technology, examining how IT transforms banks and the entire banking industry. Although the underlying economics of banking have not changed, IT developments may drive banks toward transaction banking (due to IT-based cost efficiency). Banks must adapt to new consumer preferences for IT-based products and use IT advancements to reconfigure or even reinvent relationship banking. Due to the entry of fintech startups and IT companies into traditional banking businesses, drastic changes in banking are also imminent. Government intervention and regulation will give banks more time to adjust.

Mobin et al. (2014) conducted a study aimed at identifying the future of Islamic banking in the Sultanate of Oman. This research identified phenomena related to the future of Islamic banking, customer attitudes toward Islamic banking, and the impact of Islamic banking on Oman's economy. A descriptive research design was adopted, and proportional stratified random sampling was selected for the study. The results showed that respondents demonstrated positive attitudes toward Islamic banking and support for the national economy.

Table 1. Review of the Literature

Article Title	Authors	Year	Findings
The Role of Big Data in the Future of the Banking Industry with a Scenario-Planning Approach	Maleki et al.	2024	Considering drivers, key uncertainties, and alternative scenarios by managers and decision-makers can improve bank performance and enhance competitive advantage.
A Review of Analytical Scenarios for the Future of Iranian Banking	Seyedeh Fatemeh Vaezpour	2024	Fintech adoption models, the degree of compatibility of data-driven technologies with banking structures, employee expertise, and banks' attitudes toward fintechs are among the effective factors in the future of banking.
Identification and Prioritization of Drivers of Technology-Driven Banking Futures	Arabi et al.	2023	Based on COPRAS method scores, priority drivers included: fintech adoption models in the banking industry, compatibility of data-driven technologies with banking structures and systems, and banks' attitudes toward fintechs.
Predicting the Future State of the Banking Industry in Iran Based on a Futures Studies Approach	Nasrollahi Saeedlou et al.	2023	Strategic and operational planning for the bank based on analyzing the uncertainties facing each scenario.
Fintech and the Future of Banking	Takhtaei et al.	2023	Adopting various interaction methods with this emerging phenomenon, such as investment, partnership, etc.
Designing a Process Model for Environmental Monitoring and Scanning of Future Developments in the Banking Industry	Shahbazi Ghiasi et al.	2023	This model can be utilized for understanding, analyzing, and appropriate planning to confront the future of the banking industry within the country's banking network.
Presenting a Framework for Identifying Drivers Affecting the Future of the Banking Industry with an Emphasis on the Role of Fintech	Moumivand et al.	2022	The highest priority drivers were the growth of banking startups, changing preferences of new generations regarding banking services, and the performance of technology parks and incubators.
Futures Studies of Iran's Banking Industry with an Emphasis on Digital Transformation	Arza et al.	2021	With the removal of international sanctions and connection with the international banking system, along with legal and regulatory reforms and banking system overhaul, complete digital transformation and profitability for banks are conceivable.
Futures Studies of Fintech in Iran with a Scenario-Planning Approach	Kushesh Kordshouli	2021	Fintech Paradise, Oppressive World, Deserted Island, and Fintech Hell. Fintech Paradise describes the most favorable scenario, while Fintech Hell depicts the worst for the future of fintech in Iran.
Foresight in the Banking Industry Using Scenario-Writing and Cross-Impact Matrix Approaches	Bekamiri et al.	2021	Identification of 4 scenarios—optimistic for the bank, banking industry transformation, inflationary conditions, and sanctions—for planning purposes.
Foresight of Iran's Banking Industry with an Emphasis on the Role of Fintech Startups toward the 2025 Horizon	Moradi et al.	2021	According to expert opinion, the "Fintech Heaven in the Banking System" scenario was identified as the desirable scenario for the 1404 horizon.
Exploring Future Scenarios of Electronic Banking in Iran	Bayramzadeh et al.	2019	Explored scenarios: Gradual Death of a Dream, Ray of Hope, Monetary Revolution, Policy Maker Intelligence, Paradise, and Commercial Prosperity.
Futures Studies of the Banking Industry with a Scenario-Writing Approach	Shamshiri et al.	2019	Identification of driving forces by experts and specialists.
Identification of Trends and Future Scenarios of Iran's Banking System	Ali Hosseini et al.	2019	The banking system suffers from structural problems, including non-compliance with financial standards and legal weaknesses, and is exposed to crisis regardless of sanctions.
The Future Ahead of Iran's Banking Industry with a Scenario-Planning Approach	Rashid Ardah et al.	2017	Greater impact of profitability, sources and uses of funds, government and economy, interest and legal reserve, non-performing loans, capital adequacy, sanctions, laws and regulations, mandatory facilities, and the economic environment on the future of the banking industry.
A Systematic Review of Fintech and Bank Profitability	Traune et al.	2024	Fintech operates at both the bank and country levels, and profitability determinants include both bank-specific and country-specific variables.
Blockchain in the Banking Industry: A Systematic Review and Bibliometric Analysis	Masud Rahman	2024	Transforming the banking sector through fintech innovation, blockchain, and artificial intelligence.
A Review of the Impact of Artificial Intelligence on the Future of Banking and How to Achieve a Smooth Transition	Smith	2024	An initial proper understanding of the potential benefits, challenges, and critical implementation milestones of AI is essential to achieving desired success from its implementation.

Fintech Research: Systematic Mapping, Classification, and Future Directions	Liu	2024	Systematic mapping provides a comprehensive review of current fintech publications, analysis of the current state, maturity level, and future directions of fintech research.
The Future of Banking: What Are the Real Barriers to Bank Digitalization?	Ulrich-Diener et al.	2023	These findings enhance bank practitioners' understanding and awareness of digitalization barriers and contribute to the field of bank digitalization.
Toward a Data-Driven Technology Roadmap for the Future Bank: Examining Big Data Analytics to Support Technology Roadmapping	Maja et al.	2022	The roadmap principles for the future bank, based on the proposed framework, include data literacy, data governance, and culture as the foundation for being data-driven.
Fintech and the Future of Banking	Broby	2021	In an increasingly digital world, trust will remain at the core of banking, but liquidity transformation will continue to play an important role, and the nature of banking and financial services will change dramatically.
The Future of the Banking Industry in the Era of Digital Transformation	Gucci	2020	Intense competition between fintech startups and traditional banks.
The Future of Banking: The Role of Information Technology	Jakšić	2015	Banks must adapt to new consumer preferences for IT-based products and use IT advancements to reconfigure or even reinvent relationship banking.
The Future of Islamic Banking in the Sultanate of Oman	Mobin et al.	2014	Results showed that respondents demonstrated positive attitudes toward Islamic banking and support for the national economy.

Source: Research Findings

3. Conclusion

Futures studies is an interdisciplinary science that, by analyzing current trends and identifying driving forces of change, simulates and proposes possible, probable, and desirable futures. In the banking industry, futures studies entail identifying emerging technologies, changes in customer behavior, and operational challenges that may reshape banks in the future.

Futures studies in the banking industry involves examining forthcoming changes and trends with the aim of predicting future opportunities and threats, designing flexible strategies, and building the capability for rapid adaptation to dynamic economic and technological environments. This concept is founded on a set of theories and fundamental principles. In this study, three main axes of futures studies—emerging technologies in banking, including artificial intelligence; the role of human capital in banking; and operational challenges in banking—were examined through a systematic review. The review of the literature indicates that for success in the modern banking industry, banks must simultaneously focus on these three main axes: investing in emerging technologies, empowering human capital, and managing operational challenges. All three areas require targeted policymaking that is coordinated with environmental changes. The proposed strategies necessitate coordination and meticulous planning so that banks can achieve their objectives in today's dynamic world. Banks can play a leading role and respond to future competition by focusing on innovation and emerging technologies, empowering human capital and creating motivation, and developing risk management strategies and improving customer experience.

For a better future for banks, several strategic recommendations can be offered across the three main axes of technology, human capital, and operational challenges:

Policy Recommendations and Suggestions:

3.1. Emerging Technologies:

Investment in Digitalization: Implementing blockchain-based systems for transaction transparency and reducing fraud risks; developing AI-based services for customer behavior analysis, needs prediction, and service personalization; utilizing cloud banking for secure storage and infrastructure cost reduction; developing open banking platforms for collaboration with fintechs and innovative businesses.

Focus on Digital Services: Designing and developing applications with advanced features such as automated bill payment, investment management, and smart lending; providing AI-powered digital assistants for rapid customer response.

Cybersecurity: Establishing specialized centers to counter cyberattacks and using advanced analytics for threat identification; developing new security standards for customer data protection.

3.2. The Role of Human Capital:

Employee Empowerment: Designing regular training courses in areas related to fintech, data analytics, cybersecurity, and emerging technologies; encouraging employees to participate in international events and workshops related to digital banking.

Creating a Culture of Innovation: Forming internal innovation teams to identify new ideas and improve processes; granting rewards and special incentives to employees who present creative ideas.

Enhancing Job Satisfaction: Offering motivational schemes such as increased benefits, flexible work programs, and facilities for employees; increasing internal communication and providing opportunities for career growth in specialized departments.

3.3. Operational Challenges:

Risk Management: Developing operational risk management systems to identify threats, predict problems, and mitigate losses; collaborating with research centers and consultants to formulate scenarios for confronting economic challenges (such as sanctions and inflation).

Enhancing Customer Experience: Providing fully digital and remote services to reduce branch visits; designing simpler processes for services such as lending, account management, and account opening.

Keeping Pace with Regulations: Investing in RegTech technologies for faster and easier compliance with domestic and international financial laws; establishing a specialized unit for reviewing and monitoring legal and regulatory changes.

Moving Toward Sustainability: Implementing green banking by reducing paper consumption and utilizing sustainable technologies; reporting on the bank's environmental actions to gain stakeholder and customer trust.

Additionally, the following articles can serve as useful resources for a deeper understanding of each of the axes discussed: Haddadi et al. (2024), Chaichian et al. (2023), and Shirdel et al. (2022).

Author Contributions

All authors contributed equally to the conception, preparation, and writing of this manuscript.

Conflict of Interest

The authors, while observing publication ethics in the referencing, declare the absence of interest of conflict.

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Data availability

This article does not contain any Supplementary Material.

AI Used Statment

The authors retain full responsibility for the accuracy, originality, integrity, legality, and ethical compliance of all text, data, tables, figures, analyses, references, and conclusions, and have verified all AI-assisted outputs. Any fabrication, falsification, manipulation, plagiarism, copyright infringement, or other misuse of AI remains solely the responsibility of the authors and does not transfer or diminish their accountability for the published work.

References

- Ali Hosseini, S., Keshavarz Tork, A., Goodarzi, Gh., Fazli, S., & Bayat, R. (2019). Identification of trends and future scenarios of Iran's banking system. *Quarterly Journal of Public Policy*, 5(1), 33-158. (in Persian)
- Arabi, S. H., Maleki, M. H., Omidali, A., Adeli, A., & Ghasemi, S. A. (2023). Identification and prioritization of drivers of technology-driven banking futures. *Journal of Strategic Management and Futures Studies*, 6(2), 1-22. (in Persian)
- Arza, A. H., & Abdollahi Pour, M. S. (2021). Futures studies of Iran's banking industry with an emphasis on digital transformation. *Proceedings of the 3rd Iran Finance Conference: Main Theme of Financial Industry Futures Studies*.
- Bayramzadeh, S., & Rajabi Nojoudi, M. (2019). Exploring future scenarios of electronic banking in Iran. *Quarterly Journal of Public Policy*, 5(2), 9-24.

- Bekamiri, H., et al. (2021). Foresight in the banking industry using scenario-writing and cross-impact matrix approaches.
- Broby, D. (2021). Fintech and the future of banking. *Journal of Digital Banking*, 6(2), 111-124.
- Chaichian, S. A., Rashidi, M. A., Shafiei Nateg, M. M., & Khanizad, R. (2023). Meta-synthesis of barriers to realizing digital transformation: A case study of the banking industry of the Islamic Republic of Iran. *Quarterly Journal of Strategic Management Thought*, 17(3), 1-24.
- Gucci, A. (2020). The future of the banking industry in the era of digital transformation. *Journal of Financial Innovation*, 6(3), 1-15.
- Haddadi, H., Khamseh, A., Torabi, T., & Shakeri, R. (2024). A paradigmatic model of innovation strategy with a digital transformation approach in the banking industry: A grounded theory. *Journal of Transformation Management*, 16(32).
- Jaksić, M. (2015). The future of banking: The role of information technology. *Journal of Banking and Financial Technology*, 1(1), 1-10.
- Kushesh Kordshouli, R., Gholami Jamkarani, R., Maleki, M. H., & Mirfeyz Fallah, Sh. (2020). Futures studies of fintech in Iran with a scenario-planning approach. *Quarterly Journal of Planning and Budgeting*, 25(3), 33-63. (in Persian)
- Liu, Y. (2024). Fintech research: Systematic mapping, classification, and future directions. *Journal of Financial Technology*, 12(1), 45-72.
- Maja, P., et al. (2022). Toward a data-driven technology roadmap for the future bank: Examining big data analytics to support technology roadmapping. *Technological Forecasting and Social Change*, 178, 121574.
- Maleki, M. H., Mortazavi, S. M., Shiroveyeh Pour, Sh., & Zare Bahnamiri, M. J. (2024). The role of big data in the future of the banking industry with a scenario-planning approach. *Smart Business Management Studies*, 12(74), 271-313.
- Masud Rahman, M. (2024). Blockchain in the banking industry: A systematic review and bibliometric analysis. *Journal of Banking and Finance*, 158, 107045.
- Mobin, M., et al. (2014). The future of Islamic banking in the Sultanate of Oman. *Journal of Islamic Banking and Finance*, 2(1), 1-18.
- Moradi, Sh., Naderi, N., & Delangizan, S. (2021). Foresight of Iran's banking industry with an emphasis on the role of fintech startups toward the 2025 horizon. *Smart Business Management Studies*, 10(38), 37-67.
- Moumivand, B., Gholami Jamkarani, R., Maleki, M. H., & Jahangirmia, H. (2022). Presenting a framework for identifying drivers affecting the future of the banking industry with an emphasis on the role of fintech. *Journal of Financial Economics*, 16(4), 175-194.
- Nasrollahi Saeedlou, R., & Ranjpour, R. (2023). Predicting the future state of the banking industry in Iran based on a futures studies approach. *Quarterly Journal of Islamic Economics and Banking*, 45, 1-18.
- Rashid Ardah, H., Moghaddam Zanjani, M. V., & Khazaei, S. (2017). The future ahead of Iran's banking industry with a scenario-planning approach. *Journal of Strategic Management Studies*, 30, 6-89.
- Shahbazi Ghiasi, M., & Showqi, M. (2022). Designing a process model for environmental monitoring and scanning of future developments in the banking industry. *Quarterly Journal of Strategic Budget and Finance Research*, 4, 87-110.
- Shamshiri, F., Ebrahimi, A. H., Samiei, R., & Ashrafi, M. (2019). Futures studies of the banking industry with a scenario-writing approach. *Quarterly Journal of Management Futures Studies*, 30(119).
- Shirdel, S., Dehghanan, H., Haghighat Kafash, M., & Taghavi Fard, M. T. (2022). Sustainable human resource management in the banking industry. *Quarterly Journal of Strategic Management Studies*, 49, 283-298.
- Smith, J. (2024). A review of the impact of artificial intelligence on the future of banking and how to achieve a smooth transition. *Journal of Financial Services Research*, 65(2), 145-168.
- Takhtaei, N., & Hatami, N. (2023). Fintech and the future of banking. *Quarterly Journal of New Research Approaches in Management and Accounting*, 7(90), 232-237.
- Tadbiri, S., Mirahmadi, F., Afsharnejad, A. R., & Majidi, M. (2020). Designing a value creation model for human resource units (Case study: Banking industry). *Journal of Management Studies*, 15(57), 123-151.
- Traune, F., et al. (2024). A systematic review of fintech and bank profitability. *Journal of Banking & Finance*, 160, 107089.
- Ulrich-Diener, M., et al. (2023). The future of banking: What are the real barriers to bank digitalization? *Journal of Financial Transformation*, 57, 67-82.
- Vaezpour, S. F. (2024). A review of analytical scenarios for the future of Iranian banking. *Journal of Elite Science and Engineering*, 9(4).