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Karim. Asghari[1], Seyedeh Laya. Mortazavi[2*], Seyedeh Fataneh . Moghimi[2], Mousa . Rezvani Chaman[2]

1 Ph.D. Student, Department of Management, As.C., Islamic Azad University, Astara, Iran
2 Department of Management, As.C., Islamic Azad University, Astara, Iran

Corresponding author email address:
l.mortazavi@iau.ac.ir

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Designing a Change Management Model for Digital Transformation in Iranian State-Owned Banks: A Case Study of Bank Melli Iran

ABSTRACT

The purpose of this study was to design a paradigmatic model of change management for digital transformation in Iranian state-owned banks, with Bank Melli Iran as the case study. This qualitative study was conducted using thematic analysis (Braun & Clarke, 2006). Data were collected through in-depth semi-structured interviews with 18 academic and executive experts (7 academic experts and 11 executive experts). Sampling was conducted using purposive judgmental and snowball sampling techniques until theoretical saturation was reached. The coding process was carried out at three levels: open coding (180 codes), axial coding (88 subthemes), and selective coding (24 main themes and 6 overarching themes). The final model consists of six overarching themes: (1) causal conditions (competitive pressure from fintech firms and digital banks, regulatory requirements imposed by the Central Bank, technological lag and sunk costs, and the strategic gap between the current state and the envisioned future); (2) the core phenomenon (transformational change management through the fundamental redefinition of processes, structures, culture, and competencies); (3) contextual conditions (bureaucratic structure and dysfunctional centralization, a risk-averse and procedure-oriented organizational culture, insufficient system integration and data silos, the digital competency gap and job burnout, and insufficient financial resources and inflexible budgeting); (4) intervening conditions (managerial instability and frequent turnover of senior managers, a psychological climate characterized by distrust and reduced transparency, employees' ontological anxiety regarding displacement or marginalization due to automation, lock-in to time-consuming decision-making procedures, and the absence of experimental environments and successful indigenous models); (5) seven strategic approaches (transformational leadership and strategic agency, systematic human capital empowerment through a digital learning architecture, stakeholder networking and transparent participatory communication, agile redesign of processes and structures, sensemaking and symbolic ritualization of change, dynamic resource mobilization and ecosystem partnerships with fintech firms and universities, and technological integration and data-driven architecture); and (6) outcomes (operational and customer-oriented outcomes and strategic and competitive outcomes). By precisely identifying persistent barriers (contextual conditions) and situational barriers (intervening conditions) and proposing practical and context-specific strategies, the proposed model can serve as an actionable roadmap for managers of state-owned banks in managing digital transformation-related change.

Keywords: model design, change management, digital transformation, Iranian state-owned banks, thematic analysis.

Introduction

Digital transformation has become one of the most consequential forces reshaping contemporary organizations, industries, and economic systems. Unlike conventional technological modernization, which is often limited to the acquisition of new information systems or the automation of existing activities, digital transformation entails a more fundamental

reconfiguration of organizational processes, structures, capabilities, decision-making mechanisms, customer relationships, and value-creation models. The increasing diffusion of artificial intelligence, big-data analytics, cloud computing, digital platforms, mobile technologies, application programming interfaces, and automated service infrastructures has accelerated this transition and has compelled organizations to reconsider how they operate and compete. At the macro level, digitalization is also closely associated with institutional quality, financial freedom, industrial development, and the capacity of economies to move toward more complex and knowledge-intensive structures, indicating that digital transformation is not merely an organizational concern but a broader institutional and developmental process [1]. In this environment, organizations that fail to develop appropriate digital capabilities may face declining efficiency, reduced adaptability, weaker customer relationships, and loss of competitive position.

The banking industry is particularly exposed to these developments because banking activities are fundamentally information-intensive, technology-dependent, and increasingly platform-based. The emergence of financial technology firms, digital-only banks, mobile financial services, open-banking ecosystems, and data-driven financial platforms has significantly altered traditional competitive boundaries. FinTech innovations have influenced multiple dimensions of bank performance by changing transaction mechanisms, customer interfaces, cost structures, service delivery, risk assessment, and competitive dynamics [2]. Consequently, conventional banks can no longer regard digital technologies merely as supplementary service channels; rather, digitalization increasingly constitutes a core element of banking strategy and organizational survival. The transition from branch-centered banking to integrated digital service ecosystems requires banks to rethink their operating models, technological architectures, customer engagement strategies, and internal competencies. Recent studies emphasizing next-generation digital banking also demonstrate that platform quality, reliability, usability, accessibility, security, responsiveness, and integration are becoming central determinants of the effectiveness of digital banking systems [3].

At the same time, changes in customer expectations intensify the pressure on banks to accelerate digital transformation. Contemporary customers increasingly expect financial services to be available continuously, rapidly, securely, and with minimal procedural complexity. Mobile banking has become an important interface through which customers manage personal finances, make payments, transfer funds, access banking information, and interact with financial institutions. Customers' intentions to adopt and continue using mobile banking applications are shaped by a combination of perceived utility, convenience, service experience, confidence, and technological characteristics [4]. Similarly, digital service quality in next-generation banking increasingly depends on customers' perceptions of efficiency, responsiveness, personalization, technological reliability, and seamless interaction across channels [5]. These developments create a strategic imperative for traditional banks to move beyond isolated digital initiatives and develop integrated digital capabilities capable of delivering consistent value across organizational and customer-facing processes.

However, digital transformation cannot be reduced to the implementation of technologies. One of the most important findings emerging from the contemporary literature is that digital initiatives succeed or fail largely through organizational and managerial mechanisms. The introduction of new technologies often alters employees' roles, authority structures, workflows, knowledge requirements, accountability systems, and established routines. As a result, digital transformation inevitably generates organizational change that must be actively managed. A systematic review of the relationship among digitalization, employee change management, and organizational productivity indicates that the effectiveness of digital

transformation depends considerably on how organizations align technological change with employee adaptation, learning, participation, and organizational support [6]. Therefore, change management must be considered an integral component of digital transformation rather than a secondary intervention implemented after technology has already been introduced.

Change management refers to the systematic process through which organizations prepare for, implement, stabilize, and institutionalize organizational transitions. It encompasses leadership commitment, communication, employee participation, capability development, structural redesign, cultural adaptation, resistance management, and the establishment of mechanisms that reinforce new behaviors and practices. Traditional change management models have emphasized the importance of sequencing organizational interventions, reducing uncertainty, mobilizing commitment, and strengthening organizational agility [7]. Nevertheless, digital transformation poses distinctive challenges because it is typically continuous rather than episodic, multidimensional rather than localized, and characterized by rapid technological and competitive change. Consequently, organizations need approaches to change management that are sufficiently adaptive to accommodate ongoing experimentation, continuous learning, cross-functional coordination, and repeated reconfiguration.

Leadership and managerial capabilities are especially important in this context. Digital transformation requires managers not only to approve technological investments but also to interpret environmental change, articulate a compelling digital vision, allocate resources, coordinate stakeholders, and create organizational conditions in which employees can adapt to new roles and expectations. Research on dynamic managerial capabilities suggests that managers' capacity to sense opportunities, mobilize organizational resources, and reconfigure existing competencies contributes to strategic agility and digital readiness [8]. In banking specifically, dynamic managerial capabilities can facilitate digital innovation and contribute to stronger perceived financial performance by enabling organizations to respond more effectively to technological and market developments [9]. Accordingly, the quality of managerial action during digital transformation can determine whether digital technologies become embedded in organizational processes or remain fragmented technological projects with limited strategic value.

Transformational leadership and digital leadership are likewise important because major technological changes frequently create uncertainty, resistance, and perceived threats among employees. Effective leadership can provide direction, meaning, psychological reassurance, and organizational coherence during transformation. Studies in digitally transforming organizations have highlighted the interconnected roles of digital leadership, change management, and individual competencies in improving organizational performance [10]. Leadership is also critical for developing sustainable organizational change in environments characterized by rapid digitalization, because leaders must simultaneously manage technological innovation and the human consequences of transformation [11]. In this respect, change management in digital transformation requires strategic agency: managers must actively shape organizational interpretations of change, mobilize support, resolve resistance, and align digital initiatives with broader organizational objectives.

The development of digital competencies is another essential dimension of successful transformation. New digital systems often require employees and managers to acquire knowledge related to data analytics, digital workflows, platform-based services, cybersecurity, remote collaboration, customer analytics, and technology-enabled decision-making. Conventional training mechanisms may be insufficient when organizations are undergoing continuous technological change. Virtual and digitally enabled training can provide flexible mechanisms for developing managerial and employee capabilities within digital service organizations and can contribute to more systematic competence development [12]. Therefore, the architecture of

learning itself must be redesigned so that organizations can continuously update skills, support role transitions, and reduce the competency gaps that frequently emerge during digital transformation.

Organizational resilience is also closely connected to the management of digital transformation. Digital transformation exposes organizations to new forms of uncertainty, including technological disruption, changing customer behavior, cybersecurity risks, shifting competitive boundaries, and the obsolescence of established competencies. Organizations capable of integrating digital transformation with effective change management may be better positioned to absorb disruptions, adapt structures, and sustain performance under changing conditions [13]. From this perspective, change management contributes not only to the successful implementation of individual digital projects but also to the broader adaptive capacity of the organization.

Among the most critical organizational factors influencing change is organizational culture. Digital transformation frequently requires movement away from rigid routines, excessive formalization, hierarchical decision-making, and risk avoidance toward experimentation, collaboration, knowledge sharing, customer orientation, and continuous learning. In banking organizations, organizational culture can play a decisive role in determining employees' responses to change and the degree to which new organizational practices are accepted and institutionalized. Evidence from the Iranian banking context indicates that organizational culture is significantly related to the management of organizational change and can either facilitate or constrain employees' adaptation to new organizational conditions [14]. This issue is especially relevant in large public-sector banks, where long-established administrative routines and formalized structures may make organizational transformation more difficult.

Trust represents another important component of banking change processes. Organizational change can generate concerns about job security, professional identity, managerial intentions, transparency, and fairness. These concerns may be particularly pronounced when digitalization introduces automation and changes the distribution of tasks between employees and technologies. The literature on commercial banking has shown that change management has an important role in the formation and maintenance of organizational trust, suggesting that poorly managed change can erode employees' confidence in organizational leadership and transformation initiatives [15]. Transparent communication, employee participation, predictable decision-making, and credible leadership are therefore essential for preventing digital transformation from being interpreted as a threat rather than an opportunity for organizational development.

These challenges become even more complex in state-owned banking institutions. Public-sector banks frequently operate within dense regulatory frameworks and are subject to multiple institutional expectations, administrative procedures, public accountability requirements, and policy constraints. Their technological infrastructures may also include legacy systems accumulated over extended periods, creating difficulties in system integration and data interoperability. At the same time, government institutions are increasingly expected to improve digital readiness, modernize public services, enhance interoperability, and strengthen digitally enabled governance. International assessments of digital government readiness emphasize the importance of institutional capacity, digital infrastructure, governance mechanisms, human capital, and integrated service architectures for successful national digital transformation [16, 17]. Such pressures create a dual challenge for state-owned banks: they must respond to competitive market forces while simultaneously complying with regulatory and governmental requirements.

The Iranian banking system illustrates these tensions particularly clearly. Iranian state-owned banks operate within a setting characterized by institutional complexity, regulatory constraints, growing customer demand for digital banking services, competition from emerging financial technologies, and the continuing need to modernize technological infrastructure. Recent domestic studies demonstrate increasing scholarly attention to digital banking development and the transformation of banking service supply chains. Research on Industry 4.0 maturity dimensions in banking services has emphasized the need to develop technological, organizational, and operational capabilities in order to advance digital banking [18]. Similarly, the design of a digital banking market penetration model for Bank Sepah indicates that successful digital banking development depends on interacting structural, technological, customer-related, strategic, and institutional factors [19]. These findings confirm that digital banking transformation in Iran is a multidimensional process that extends beyond individual technological initiatives.

A systemic perspective has also become increasingly important in understanding banking innovation. Digital transformation affects not only internal bank processes but also the relationships among banks, customers, regulators, technology firms, communities, and other ecosystem participants. A systemic model of social banking innovation with a digital transformation approach highlights the interconnected nature of innovation processes and the need to coordinate technological, organizational, social, and institutional dimensions [20]. This ecosystem-based perspective is particularly relevant as banks increasingly collaborate with fintech companies, universities, technology providers, and other external actors to access knowledge, innovation capabilities, and specialized digital resources.

Nevertheless, the existence of digital strategies or new technologies does not automatically produce successful transformation. A bank may invest heavily in information technology while retaining centralized decision-making, fragmented data systems, inflexible budgeting mechanisms, traditional human-resource practices, and risk-averse cultural assumptions. Such misalignment can create a significant gap between the desired digital future and the organization's actual capacity to change. Furthermore, long-term transformation is complicated by sunk technological costs associated with legacy systems, duplicated infrastructures, and investments that cannot easily be abandoned. Consequently, the effectiveness of digital transformation depends on whether organizations can simultaneously manage technological integration, organizational redesign, cultural adaptation, capability development, and stakeholder alignment.

The particular characteristics of Bank Melli Iran make it an important setting for examining these issues. As a major state-owned banking institution, its digital transformation requires coordination across a large organizational system consisting of multiple managerial levels, functional units, branches, information systems, employee groups, and customer interfaces. Such complexity means that transformation cannot be achieved solely through centralized technological mandates. Instead, it requires a coherent model capable of explaining why change is necessary, what exactly must be transformed, what contextual barriers constrain implementation, which situational conditions may strengthen or weaken the transformation process, what managerial strategies should be adopted, and what organizational and competitive outcomes are expected. Existing studies provide valuable insights into individual components of this process, including digital innovation, digital readiness, leadership, organizational culture, competencies, service quality, customer adoption, and resilience; however, these components often remain analytically fragmented.

This fragmentation creates an important research gap. Many existing approaches examine technological, behavioral, strategic, or organizational dimensions separately, while managers in state-owned banks must confront these dimensions

simultaneously. Moreover, the distinction between relatively persistent contextual barriers—such as bureaucratic structure, fragmented systems, cultural rigidity, competency gaps, and financial constraints—and more situational intervening conditions—such as managerial instability, distrust, uncertainty, resistance, and procedural lock-in—has not been sufficiently articulated in a context-specific model of digital transformation change management. Developing such a distinction is theoretically valuable because it clarifies which barriers require long-term structural transformation and which can be influenced through targeted managerial interventions. It is also practically important because it allows managers to allocate resources and select change strategies more precisely.

Accordingly, a context-sensitive paradigmatic model can contribute to both theory and practice by integrating causal drivers, the core phenomenon of transformational change management, contextual conditions, intervening conditions, operational strategies, and expected outcomes within a unified framework. Such an approach is compatible with the growing recognition that digital transformation is simultaneously technological, organizational, cultural, managerial, and institutional. It also responds to the need for management models that reflect the specific realities of state-owned banking rather than simply transferring generic private-sector frameworks to highly regulated public financial institutions.

Therefore, the aim of this study was to design a paradigmatic model of change management for digital transformation in Iranian state-owned banks, with Bank Melli Iran as the case study.

Methodology

The qualitative phase of the present study was conducted using a qualitative approach and the thematic analysis strategy. This method was selected because of its high degree of flexibility, its capacity to provide a rich and systematic description of the data, and its ability to identify latent patterns of meaning within the complex context of organizational phenomena (Braun & Clarke, 2006). Participants in this phase comprised two groups: “academic experts” (university faculty members with relevant areas of expertise) and “executive experts” (senior and middle managers of Bank Melli Iran and other state-owned banks). Sampling began using purposive judgmental sampling and subsequently continued through the snowball technique until theoretical saturation was achieved. Theoretical saturation was reached when no new themes emerged in the seventeenth and eighteenth interviews. Ultimately, in-depth interviews were conducted with 18 participants, including 7 academic experts and 11 executive experts.

The primary data collection instrument in this phase was the semi-structured interview. The interview questions were designed based on the main research questions and informed by the relevant theoretical foundations. Examples of the interview questions included: “What are the most important drivers compelling Bank Melli Iran to undertake digital transformation?”, “What are the most significant structural, cultural, and human barriers to this transformation?”, and “What operational strategies are required for the successful management of this change?” Each interview lasted between 60 and 90 minutes. All interviews were audio-recorded with the participants’ permission and subsequently transcribed verbatim.

It should be noted that the qualitative data were analyzed in accordance with Braun and Clarke’s (2006) six-phase approach and at three systematic levels. Open coding (descriptive level): At this stage, the researcher conducted a line-by-line examination of the interview transcripts and extracted 180 initial codes. Axial coding (interpretive level): In the next stage, the initial codes were categorized and consolidated according to semantic similarity and causal relationships, resulting in the formation of 88 subthemes. Selective coding (macro level): Finally, the subthemes were integrated and organized, first

into 24 main themes and subsequently into 6 overarching themes, which constituted the final paradigmatic model of the study. To enhance the reliability, or dependability, of the findings, the coding process was independently performed by two coders—the researcher and a PhD holder in management—on 20% of the interviews. The calculated Cohen's kappa coefficient was 0.82, indicating an "excellent" level of agreement between the two coders.

Findings and Results

Of the 18 participants, 14 (77.8%) were men and 4 (22.2%) were women. The participants' mean age was 46.2 years, and their mean work experience was 16.9 years. In terms of educational attainment, 10 participants (55.6%) held doctoral degrees and 8 (44.4%) held master's degrees. The academic group consisted of 7 participants specializing in public administration, information technology management, information systems, innovation management, and organizational behavior. The executive group consisted of 11 senior and middle managers of Bank Melli Iran working in the areas of information technology, human resources, strategic planning, digital transformation, branch management, banking operations, performance evaluation, training, risk management, and customer relations. This diversity reflects the richness of the data and the inclusion of multilayered perspectives from both theory and practice.

The results of the thematic analysis led to the development of a paradigmatic model (Figure 1) comprising 6 overarching themes, 24 main themes, and 88 subthemes. Each of these six overarching themes is described below.

Table 1

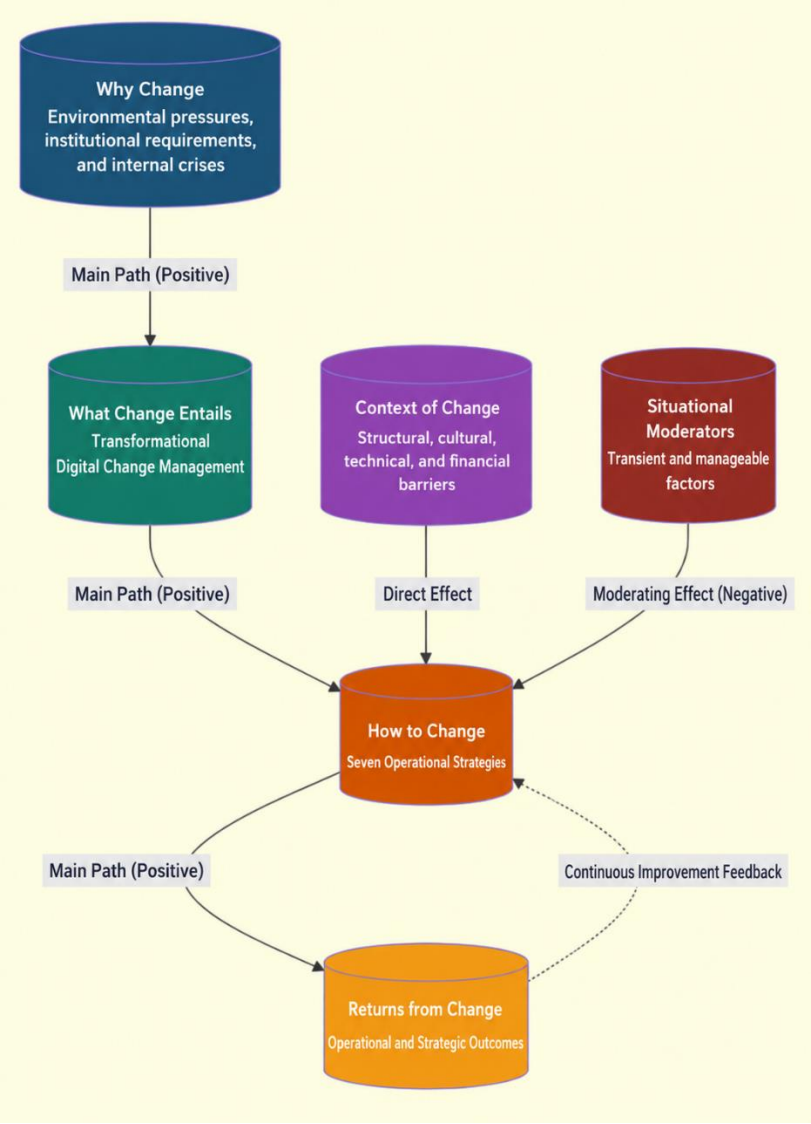
Overarching Themes, Main Themes, and Examples of Subthemes in the Change Management Model

No.	Overarching Theme	Key Concepts	Objective Components (Summary)
1	"Why Change: Environmental Pressures, Institutional Requirements, and Internal Crises Driving the Digitalization of Bank Melli Iran"	External and internal drivers that compel organizational change and whose neglect may threaten the bank's survival.	1. Competitive pressure from fintech firms and digital banks 2. Central Bank regulatory requirements and higher-level policy documents 3. Technological lag and sunk costs 4. Strategic gap between the current state and the digital transformation vision
2	"What Change Entails: Transformational Digital Change Management in Bank Melli Iran"	Digital transformation represents a fundamental transformation across the three layers of processes, structures, and culture, requiring transformational change management.	1. Fundamental redefinition of business processes 2. Redefinition of organizational structures—from vertical structures to customer-oriented network structures 3. Redefinition of organizational culture—from risk aversion to continuous learning 4. Redefinition of competencies and job roles
3	"Context of Change: Structural, Cultural, Technical, and Financial Barriers to Digitalization in Bank Melli Iran"	Persistent organizational conditions that frequently act as barriers to the implementation of change management strategies.	1. Bureaucratic structure and dysfunctional centralization (nine managerial layers) 2. Risk-averse and procedure-oriented culture 3. Insufficient system integration and data silos 4. Digital competency gap and job burnout (mean age: 47 years) 5. Insufficient financial resources and inflexible budgeting
4	"Situational Moderators: Factors That Facilitate or Undermine Change Management Implementation"	Temporary and manageable factors associated with the psychological climate, trust, managerial stability, and interpersonal relationships.	1. Managerial instability and frequent turnover of senior managers 2. Psychological climate of distrust and reduced transparency 3. Employees' ontological anxiety concerning automation (fear of job loss) 4. Lock-in to time-consuming decision-making procedures 5. Absence of experimental environments (sandboxes) and successful indigenous models
5	"How to Change: A Set of Operational Strategies for Managing Digital Transformation in Bank Melli Iran"	Systematic actions across seven domains for successfully managing human, structural, and cultural change.	1. Transformational leadership and strategic agency 2. Systematic human capital empowerment through a digital learning architecture 3. Stakeholder networking and transparent participatory communication 4. Agile redesign of processes and structures 5. Sensemaking and symbolic ritualization of change 6. Dynamic resource mobilization and ecosystem partnerships with fintech firms and universities

			7. Technological integration and data-driven architecture
6	"Returns from Change: Operational, Customer-Oriented, and Strategic Outcomes of Digital Transformation in Bank Melli Iran"	Measurable achievements classified into short-/medium-term operational outcomes and medium-/long-term strategic outcomes.	Operational and customer-oriented: increased transaction speed, reduced human error, process integration, cost reduction, increased customer satisfaction, 24/7 accessibility, service personalization, and growth in digital revenue. Strategic and competitive: enhanced employees' digital literacy, institutionalization of a learning culture, improved brand image, alignment with international standards, increased market share, and return on digital transformation investment (ROI).

Figure 1

Paradigmatic Model of Change Management for Digital Transformation in Bank Melli Iran



Discussion and Conclusion

The present study aimed to design a paradigmatic model of change management for digital transformation in Iranian state-owned banks, with Bank Melli Iran as the case study. The thematic analysis yielded a model comprising six overarching themes: causal conditions, the core phenomenon, contextual conditions, intervening conditions, change-management strategies, and outcomes. More specifically, the findings indicated that digital transformation in Bank Melli Iran is driven by competitive pressure from fintech firms and digital banks, regulatory and institutional requirements, technological

backwardness and sunk costs, and a strategic gap between the bank's current condition and its desired digital future. At the center of the model was transformational change management, conceptualized as a fundamental redefinition of business processes, organizational structures, organizational culture, competencies, and job roles. The model further demonstrated that the effectiveness of this transformation is influenced by relatively persistent contextual barriers, such as bureaucratic centralization, a risk-averse culture, fragmented technological systems, digital competency gaps, employee burnout, and financial constraints, as well as more situational intervening conditions, including managerial instability, distrust, employees' ontological anxiety regarding automation, procedural lock-in, and the absence of experimental platforms. In response to these challenges, seven strategic domains were identified: transformational leadership and strategic agency, systematic human capital empowerment, stakeholder networking and transparent communication, agile redesign of processes and structures, sensemaking and symbolic institutionalization of change, dynamic resource mobilization and ecosystem partnerships, and technological integration through data-driven architecture. Finally, the model identified both operational/customer-oriented outcomes and strategic/competitive outcomes as the expected consequences of successful change management.

The first major finding concerns the causal conditions that create pressure for digital transformation. Competitive pressure from fintech firms and digital banks emerged as one of the most important external drivers. This finding is consistent with the growing body of evidence showing that fintech development has substantially altered the competitive architecture of banking by introducing new mechanisms for payments, lending, investment, customer interaction, and digital financial services [2]. The pressure exerted by fintech firms is not limited to competition over specific products; rather, it challenges the traditional operating logic of banks by offering faster, more personalized, data-driven, and platform-based services. Likewise, customers increasingly expect seamless, convenient, reliable, and continuously accessible digital financial services, which makes the quality of digital banking platforms a strategic issue rather than a purely technical concern [3, 5]. The finding that customer-oriented digitalization is a fundamental driver of transformation is also consistent with evidence that perceived usefulness, service convenience, technological quality, and digital experience influence both initial and continued use of mobile banking applications [4].

The study also identified regulatory and institutional requirements as important causal conditions. This result is particularly relevant in state-owned banking, where transformation occurs under strong governmental, regulatory, and institutional influence. Digital readiness is increasingly treated as an institutional capability involving governance, infrastructure, interoperability, data management, service redesign, and human capital development [16]. Broader international evidence also suggests that digital transformation is embedded in institutional and economic structures and that the relationship among digitalization, institutional quality, and economic development is complex and mutually reinforcing [1]. Therefore, regulatory pressure on Iranian state-owned banks should not be understood simply as compliance pressure; rather, it reflects a broader transition toward digitally enabled public and financial governance. Similarly, the importance of higher-level policies and institutional frameworks is compatible with findings highlighting the systemic and structural dimensions of digital banking development in Iran [19, 20].

The core phenomenon identified in this study was transformational digital change management. Participants emphasized that successful digital transformation requires more than installing new technologies; it involves fundamental changes in processes, structures, culture, competencies, and job roles. This finding strongly supports the contemporary view that digital

transformation is inseparable from organizational change. A systematic review of digitalization and employee change management found that organizational productivity depends on the extent to which technological transformation is integrated with employee adaptation, organizational support, learning, and change-management processes [6]. Similarly, change-management models emphasize that successful organizational transformation requires coordinated interventions involving leadership, structure, communication, culture, and organizational agility rather than isolated technological adjustments [7]. The present findings therefore reinforce the argument that digital transformation should be managed as a systemic organizational transformation rather than as an information technology project.

The contextual conditions identified in the study further clarify why digital transformation is particularly difficult in large state-owned banks. Bureaucratic structure and excessive centralization were among the most prominent barriers. Such structures slow decision-making, reduce local initiative, and limit the capacity to experiment with new business models. This result can be interpreted in light of research emphasizing the importance of dynamic managerial capabilities and strategic agility in digital transformation. Organizations require managers who can sense change, mobilize resources, and reconfigure structures and capabilities rapidly [8]. In the banking sector, dynamic managerial capabilities are also associated with greater digital innovation and improved financial performance [9]. Accordingly, a highly centralized and multilayered structure can directly constrain precisely those managerial capabilities needed for digital transformation.

A second major contextual barrier was a risk-averse, procedure-oriented organizational culture. This finding is consistent with earlier evidence from the Iranian banking environment showing that organizational culture plays a significant role in employees' responses to change and the implementation of change-management initiatives [14]. Digital transformation requires experimentation, learning from failure, collaboration, and flexible adaptation, whereas risk-averse organizational cultures privilege compliance, procedural stability, and error avoidance. In such settings, even technically sophisticated digital initiatives may fail to become institutionalized because employees and managers continue to operate according to older assumptions and routines. The finding also supports broader research indicating that organizational resilience and successful digital transformation depend on the capacity to align change management with adaptive organizational behavior [13].

The lack of technological integration and the existence of data silos constituted another persistent contextual barrier. Digital banking depends on interconnected systems, high-quality data, interoperability, analytics, and integrated customer information. Fragmented systems create duplication, inconsistent information, slow decision-making, and difficulty in delivering seamless services. Studies of digital banking maturity similarly emphasize the need for integrated technological and organizational capabilities as a prerequisite for advancing digital banking [18]. Moreover, a systemic model of banking innovation suggests that digital transformation requires coordination among technological, institutional, customer, and organizational subsystems rather than isolated modernization of individual applications [20]. Thus, the technological integration strategy identified in the present study is not merely an infrastructure issue; it represents a foundational requirement for organization-wide transformation.

The digital competency gap and employee burnout also emerged as significant contextual conditions. This result is important because digital transformation frequently changes the knowledge base of jobs and increases demands for continuous adaptation. Employees must learn new platforms, digital workflows, data-based decision processes, and technology-enabled customer interactions. The literature indicates that systematic training and digitally supported managerial development are central to competence building in digital service organizations [12]. Similarly, digitalization can

contribute to productivity only when employees are adequately prepared and supported through change-management mechanisms [6]. Therefore, the finding that human capital empowerment should be implemented through a digital learning architecture is well supported. Training should not be understood as a one-time intervention; instead, it should constitute an ongoing organizational system for continuous reskilling and role adaptation.

The intervening conditions identified in the study provide another important contribution. Managerial instability and frequent turnover of senior managers were found to weaken the continuity of change initiatives. Digital transformation is typically a multi-year process requiring sustained strategic direction, consistent resource allocation, and cumulative organizational learning. Frequent changes in senior leadership may interrupt priorities, create strategic discontinuity, and reduce employee confidence. This finding is consistent with research emphasizing that leadership and managerial capabilities are central to sustaining organizational transformation [9, 11]. Without stable leadership commitment, digital projects may be repeatedly redefined or abandoned before they become institutionalized.

A psychological climate of distrust and reduced transparency was another significant intervening condition. Organizational change frequently raises questions about managerial intentions, employee security, fairness, and future roles. Research in the banking sector has shown that change management is strongly associated with trust formation, particularly when employees must adapt to new systems and procedures [15]. The present study extends this insight by showing that transparency is especially important during digital transformation, where uncertainty may be intensified by automation and data-driven restructuring. Employees who do not understand the purpose, consequences, or implementation logic of digital transformation may interpret it as a threat, increasing resistance and weakening cooperation.

The finding concerning employees' ontological anxiety is especially noteworthy. Participants described fear of job loss, marginalization, and diminished professional relevance due to automation. This indicates that resistance to digital transformation is not simply technical or behavioral; it may involve deeper concerns about identity, status, and organizational belonging. Such concerns can become powerful barriers when employees perceive automation as replacing rather than augmenting human contribution. Therefore, the importance of sensemaking and symbolic institutionalization of change becomes clear. Leadership must provide a coherent narrative explaining why transformation is occurring, how employee roles will evolve, and how individuals can remain valuable within the digital organization. This is consistent with studies emphasizing the role of leadership, communication, and competency development in managing human adaptation to digital change [10, 11].

Among the seven strategic domains, transformational leadership and strategic agency occupied a central position. This finding reflects the fact that digital transformation requires active managerial intervention rather than passive administrative oversight. Transformational leaders must articulate the digital vision, create urgency without generating destructive anxiety, mobilize resources, support experimentation, remove structural barriers, and model new patterns of behavior. The importance of such leadership is consistent with research linking leadership, change management, and digital capability to organizational performance and transformation outcomes [10]. Dynamic managerial capability research likewise emphasizes that managers must actively reconfigure organizational resources and structures in response to changing technological environments [8].

Stakeholder networking and ecosystem partnerships with fintech firms and universities were also identified as important strategies. This finding reflects the increasingly ecosystem-based nature of digital banking. Banks cannot internally generate

all relevant technologies, capabilities, and innovation resources. Collaboration with fintech firms may provide access to specialized technologies and agile innovation practices, while universities can contribute knowledge, research capacity, and human-capital development. The systemic logic of such collaboration is supported by studies emphasizing banking innovation as an ecosystem process involving multiple actors and institutional relationships [20]. It is also consistent with evidence that fintech developments can influence bank performance and strategic positioning, thereby making partnership and collaboration potentially preferable to purely defensive competition [2].

Finally, the outcome dimension of the model included operational and customer-oriented results as well as strategic and competitive outcomes. Expected operational improvements included faster transactions, fewer human errors, process integration, lower costs, greater customer satisfaction, continuous service availability, service personalization, and digital revenue growth. These outcomes are compatible with research linking high-quality digital banking platforms and service design with improved customer experience and continued digital service use [3-5]. Strategic outcomes such as improved digital literacy, institutionalized learning, enhanced brand image, stronger competitive position, and improved return on transformation investment are also consistent with evidence connecting digital innovation and managerial capability with perceived financial performance and strategic readiness [9]. More broadly, the model supports the view that digital transformation contributes to organizational resilience and competitiveness when technological change is accompanied by effective change management [13].

The present study is subject to several limitations. First, the qualitative design and reliance on 18 expert interviews limit the statistical generalizability of the findings, although theoretical saturation was achieved. Second, the study focused primarily on Bank Melli Iran, and despite the participation of experts with experience in other state-owned banks, some findings may reflect organization-specific structures, routines, and cultural characteristics. Third, the data were based on participants' perceptions and professional experiences and may therefore be affected by recall bias, organizational position, or subjective interpretations of digital transformation. Fourth, the study captured the transformation process at a particular point in time, whereas digital transformation is continuous and may evolve as technologies, regulations, competitive conditions, and organizational leadership change. Finally, although coding reliability was assessed through independent coding, qualitative interpretation inevitably involves researcher judgment.

Future research should quantitatively validate the proposed paradigmatic model using larger samples of managers and employees across multiple Iranian state-owned and private banks. Structural equation modeling could be used to test the relationships among causal conditions, contextual barriers, intervening conditions, change-management strategies, and transformation outcomes. Comparative studies between state-owned and private banks could clarify how ownership structure and regulatory constraints influence digital change management. Longitudinal studies would also be valuable for examining how the identified conditions and strategies evolve throughout different stages of digital transformation. Further research could investigate specific constructs identified in this study, particularly ontological anxiety, managerial instability, digital competency gaps, and data integration, and examine their direct and moderating effects on employee acceptance, organizational agility, customer experience, and digital transformation performance.

From a practical perspective, managers of state-owned banks should treat digital transformation as an organization-wide change program rather than as a series of independent technology projects. Senior management should establish stable governance structures for digital transformation, reduce unnecessary hierarchical layers, clarify decision rights, and create

cross-functional transformation teams. Banks should develop continuous digital learning systems for employees, communicate transparently about the implications of automation, and redesign jobs in ways that emphasize augmentation rather than displacement. Pilot environments and regulatory or organizational sandboxes should be used to test new technologies and processes before large-scale implementation. Banks should also develop integrated data architectures, eliminate fragmented information systems, strengthen partnerships with fintech firms and universities, and use measurable operational and strategic indicators to monitor transformation progress. Continuous feedback mechanisms should connect implementation outcomes to subsequent strategy revision so that change management becomes an adaptive and iterative organizational capability rather than a one-time intervention.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Written consent was obtained from all participants in the study.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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