

Identification of the Causal Conditions of Human Resource Productivity in Bank Melli Iran

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ABSTRACT

The primary objective of the present study was to identify the causal conditions affecting human resource productivity in Bank Melli Iran. This research was applied in purpose and employed an exploratory mixed-methods design (qualitative–quantitative). In the qualitative phase, the grounded theory method was used, while in the quantitative phase, a descriptive–survey approach was adopted. The statistical population in the qualitative phase consisted of 21 experts in the fields of human resource management and organizational behavior, selected through snowball sampling, with 12 participants included based on the saturation rule. In the quantitative phase, the population comprised 29,560 employees of Bank Melli Iran branches, from which a sample of 379 individuals was selected using Cochran's formula and stratified random sampling. Data were collected through semi-structured interviews in the qualitative phase and a researcher-designed questionnaire in the quantitative phase. The validity and reliability of the instruments were confirmed. Data analysis was conducted using SPSS and PLS 3.2 software. The results indicated that causal conditions—comprising components of motivation and job satisfaction, as well as training and empowerment—explain approximately 45% of the changes in productivity and play a fundamental role in shaping the productivity system.

Keywords: causal conditions, human resource productivity, Bank Melli Iran

Introduction

Human resource productivity has increasingly become a strategic imperative for organizations operating in dynamic, competitive, and technology-driven environments. As global markets evolve and industries undergo digital transformation, organizations are compelled to optimize their internal capabilities, particularly the performance and productivity of their human resources. Contemporary studies consistently emphasize that human resources represent the most critical intangible asset that can differentiate organizations, enhance operational efficiency, promote innovation, and secure long-term competitive advantage. In this context, scholars argue that productivity is no longer a mere output measure but a multifaceted construct shaped by motivation, competencies, organizational systems, technological readiness, and strategic alignment (1).



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Modern workplaces increasingly recognize motivation as a central driver of employee engagement and productivity. Motivated employees demonstrate higher levels of commitment, creativity, and performance outcomes, which directly contribute to organizational effectiveness (1). In several sectors—ranging from aviation to banking—researchers have shown that workload, stress, and organizational climate significantly shape productivity levels. For example, job stress mediated the relationship between workload and productivity in safety-critical environments, highlighting the importance of psychological well-being in sustaining high performance (2). These observations support a growing scholarly consensus that human resource productivity is influenced not only by individual attributes but also by systemic organizational and environmental factors.

Parallel to psychological influences, digital transformation has reshaped human resource management (HRM) practices worldwide. As technology diffuses rapidly across industries, organizations adapt their work processes, communication channels, and decision-making infrastructures. This technological shift has resulted in the development of innovative HRM strategies that integrate digital tools to increase efficiency, accuracy, and agility in managing human capital. These new systems support data-driven talent management, performance analytics, knowledge management, and competency development (3). This transformation is further reinforced by the need for organizations to remain resilient and competitive, particularly in turbulent economic and technological environments. As such, strategic planning for human resources must incorporate digital capabilities and transformative leadership to meet evolving market demands (4).

A significant stream of research has explored productivity models tailored to specialized contexts. For example, productivity frameworks developed for unique populations, such as athletes in the Deaf Sports Federation, reveal that integrated methodologies combining fuzzy logic, Delphi techniques, and interpretive structural modeling can effectively diagnose and enhance human resource productivity (5). The emphasis on structured modeling approaches reflects a broader academic interest in identifying causal, moderating, and mediating variables that influence productivity. Occupational health and safety (OHS) has also emerged as a critical component of HR productivity models, indicating that safe workplace environments significantly improve employee well-being and performance (6).

Educational institutions, too, have adopted multidimensional approaches to human resource productivity. The interplay between cultural capital, organizational learning, and productivity in educational systems demonstrates that social and cultural factors can shape employees' knowledge sharing, collaboration, and engagement levels (7). Similarly, the field of physical education has investigated productivity from the standpoint of organizational accountability, leadership, and strategic performance management, demonstrating how universities and higher education institutions rely on systematic productivity models to enhance departmental outputs (8).

In industrial sectors, productivity is influenced by innovation capabilities, employee competencies, and sustainable management practices. For example, studies in petrochemical enterprises highlight the role of human resource innovation capacity as a precursor to long-term sustainable productivity, particularly in technologically complex environments (9). Research in entrepreneurship further shows that the thought patterns of successful entrepreneurial leaders indirectly enhance productivity by shaping organizational culture and encouraging proactive, opportunity-driven behaviors (10). These insights reveal that productivity extends beyond operational efficiency and is deeply tied to strategic thinking and organizational learning mechanisms.

At the organizational level, productivity spillovers—particularly those generated by incentive schemes—illustrate how HRM interventions targeted at one group of employees can influence broader organizational performance.

Incentive systems, when effectively structured, can enhance motivation, foster positive competition, and create a culture of high-performance expectations (11). Complementary research in micro-enterprise development contexts underscores that competency development and human resource capacity building remain vital determinants of work productivity, especially in environments characterized by limited access to resources and support systems (12).

Strategic planning for operational productivity is essential for organizations aiming to streamline resource allocation and ensure long-term financial and functional sustainability. From an organizational resource planning perspective, proactive planning mechanisms contribute significantly to optimizing processes, preventing inefficiencies, and aligning human resources with broader strategic objectives (13). Likewise, a systematic review of human resource productivity research indicates that productivity must be conceptualized through a holistic framework integrating personal, organizational, and environmental variables (14).

In financial and service-oriented sectors such as banking, HRM practices—including recruitment, training, performance evaluation, and reward systems—play a pivotal role in shaping organizational performance. Empirical evidence from the Indian banking sector confirms that effective HRM practices not only improve productivity but also strengthen customer satisfaction, market competitiveness, and institutional trust (15). This is consistent with research in strategic human resource management from other banking systems, which emphasizes the importance of sustainable productivity models in developing and optimizing HR structures, particularly in institutions facing regulatory and market pressures (16).

Digital HRM systems, such as e-HRM platforms, have emerged as powerful tools capable of enhancing employee productivity through automation, analytics, and data integration. Studies in service industries such as the food and beverage sector show that e-HRM can significantly streamline employee management tasks, reduce inefficiencies, and improve communication, thereby boosting overall productivity (17). Furthermore, the impact of labor accounting systems on organizational productivity has been increasingly acknowledged, highlighting how accurate valuation and reporting of human capital can enhance strategic decision-making and operational performance (18).

Other scholars argue that human resource productivity is strongly shaped by contextual factors such as organizational culture, leadership behavior, and opportunities for professional development. Research shows that organizational learning and continuous improvement processes can strengthen employees' competencies, satisfaction, and commitment—key drivers of productivity in all organizational forms (7). Complementing this, competency-based HR strategies have proven particularly influential in improving productivity in small and medium-sized enterprises, where human capital plays an outsized role in organizational success (12).

Taken together, the literature demonstrates that human resource productivity is a multi-dimensional construct shaped by organizational systems, employee motivation, innovation capability, digital transformation, occupational health and safety, strategic planning, and competency development. Despite significant advancements, productivity challenges remain substantial in large-scale corporations, particularly in the banking sector, where the complexity of operations, diversity of human roles, and regulatory pressures create unique organizational dynamics. Furthermore, there is a need for empirical models capable of identifying causal conditions that most effectively predict and enhance productivity within banking institutions, especially in developing country contexts where organizational structures and human resource practices continue to undergo rapid transformation.

Therefore, the aim of the present study is to identify the causal conditions influencing human resource productivity in Bank Melli Iran.

Methods and Materials

This study was applied in purpose, exploratory mixed-methods (qualitative–quantitative) in terms of data type, and cross-sectional regarding the time of data collection. In the qualitative phase, the grounded theory method was used, and in the quantitative phase, a descriptive–survey method was employed. The statistical population in the qualitative phase consisted of 21 experts in the fields of human resource management and organizational behavior who held at least an associate professorship and had more than 15 years of work experience. In the quantitative phase, the population comprised 29,560 employees of Bank Melli Iran branches across the country. In the qualitative phase, 12 individuals were selected based on the saturation rule using snowball sampling. In the quantitative phase, 379 participants were selected as the statistical sample using Cochran's formula and stratified random sampling based on provinces.

Table 1. Size of the Statistical Population and Sample by Province

Row	Province	Population	Sample	Ratio
1	Tehran	8,500	109	28.7
2	Mazandaran	1,200	15	4.1
3	Gilan	900	12	3
4	Golestan	750	10	2.5
5	Semnan	550	7	1.9
6	East Azerbaijan	1,850	24	6.3
7	West Azerbaijan	1,200	15	4.1
8	Ardabil	680	9	2.3
9	Isfahan	2,500	32	8.5
10	Alborz	1,500	19	5.2
11	Ilam	420	5	1.4
12	Bushehr	600	8	2
13	Chaharmahal and Bakhtiari	450	6	1.5
14	Razavi Khorasan	3,200	41	10.8
15	North Khorasan	530	7	1.8
16	South Khorasan	480	6	1.6
17	Khuzestan	2,800	36	9.4
18	Zanjan	500	6	1.7
19	Sistan and Baluchestan	950	12	3.2
Total	29,560	379	100	

Data collection instruments included semi-structured interviews in the qualitative phase and a researcher-developed questionnaire with 15 items and two dimensions—"motivation and job satisfaction" and "training and empowerment"—in the quantitative phase. The questionnaire was designed using a five-point Likert scale (strongly disagree, disagree, neutral, agree, strongly agree), scored from 1 to 5 respectively. The validity of the instruments was confirmed through face validity, content validity (CVI and CVR), and construct validity. Reliability was confirmed with Cronbach's alpha coefficients above 0.70. In the qualitative phase, research credibility was ensured based on Guba and Lincoln's criteria, including credibility, dependability, transferability, and confirmability. Test–retest reliability (79%) and inter-coder agreement (71.05%) also indicated the stability of results. Data analysis in the qualitative phase was conducted using open, axial, and selective coding, and in the quantitative phase, descriptive and inferential statistics were applied using SPSS and PLS 3.2 software.

Findings and Results

In the qualitative phase, to identify the causal conditions influencing human resource productivity in Bank Melli Iran, information obtained through interviews with experts was analyzed using grounded theory and content analysis

of transcribed interviews. Codes were assigned to identify shared themes, and following the process of indicator integration, 15 indicators within 2 dimensions—"motivation and job satisfaction" and "training and empowerment"—were identified and confirmed. In this study, based on participants' perspectives, the causal conditions affecting human resource productivity in Bank Melli Iran at the selective coding stage are shown in Figure 1.

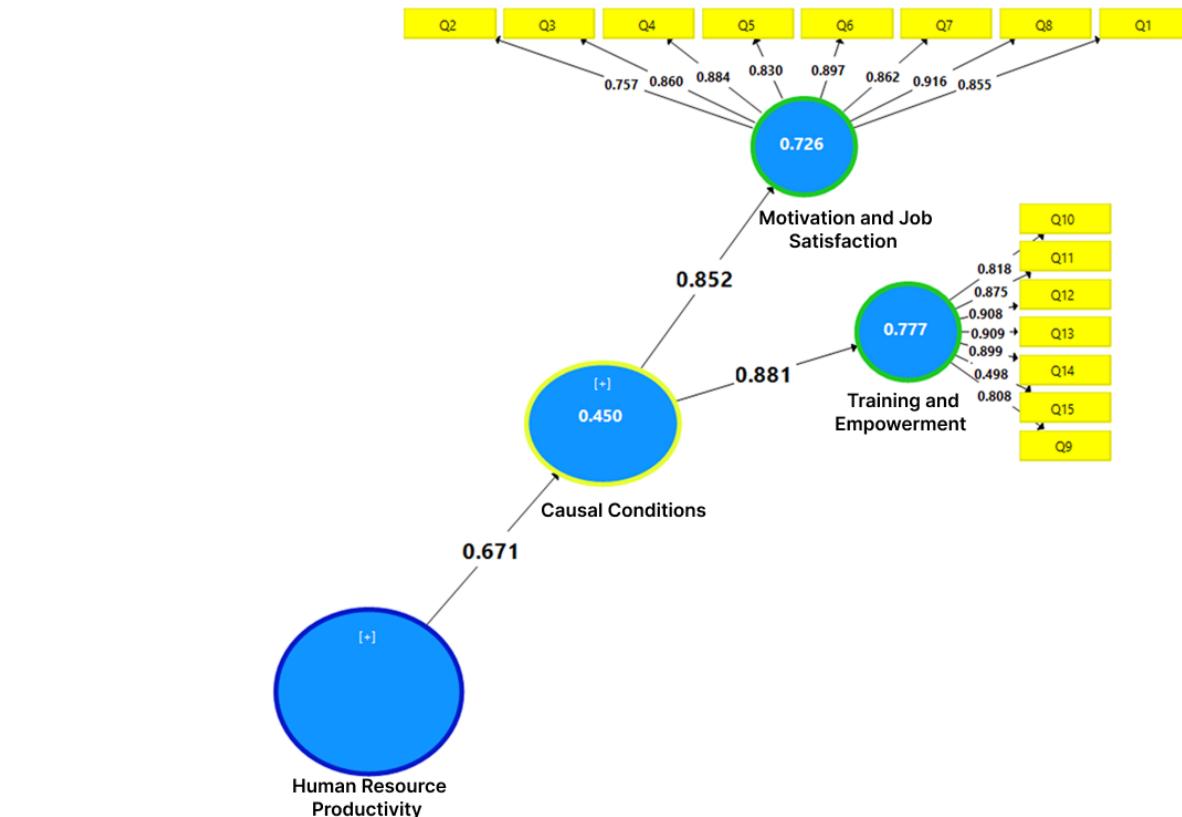


Figure 1. Relationship Between Causal Conditions and Human Resource Productivity in Bank Melli Iran (Path Coefficient Estimation Status)

Table 2. Path Coefficients Between Components and Items in the Path Coefficient Estimation Model

Item No.	Statement	Path Coefficient
1	I feel that my efforts are recognized in the organization and I receive rewards aligned with my performance.	0.855
2	A fair and transparent performance evaluation system increases motivation and a sense of justice at work.	0.757
3	Managers' supportive behavior fosters positive morale and enthusiasm among employees.	0.860
4	Satisfaction with the work environment plays a major role in enhancing my performance quality.	0.884
5	Success in my job and positive feedback from managers greatly boost my motivation to work.	0.830
6	A sense of belonging to the organization encourages me to make greater efforts to achieve its goals.	0.897
7	A fair reward system increases employees' motivation to improve performance.	0.862
8	Managers' appreciation and attention to employees' accomplishments contribute to job satisfaction.	0.916
9	The training courses provided by the bank help enhance my job-related skills.	0.808
10	In-service training has increased my ability to solve work-related problems.	0.818
11	The bank provides employees with adequate opportunities for learning and professional growth.	0.875
12	Targeted training helps employees perform their duties with greater accuracy.	0.908
13	Continuous learning is part of our organizational work culture.	0.909
14	Specialized training increases confidence in carrying out job tasks.	0.899
15	New training programs are aligned with my job requirements.	0.408

Based on the presented data, causal conditions are recognized as the key variable influencing human resource productivity in Bank Melli Iran. The overall path coefficient between causal conditions and human resource productivity is 0.671, and the coefficient of determination (R^2) is 0.450, indicating that causal conditions explain approximately 45% of the variance in human resource productivity. This positive and significant relationship shows that improvements in causal conditions directly enhance productivity, although it should be noted that 55% of the variance is explained by factors beyond causal conditions.

In examining the relationship between causal conditions and intermediary components, very strong associations are observed. The path coefficient between causal conditions and the motivation and job satisfaction component is 0.852, with an R^2 of 0.726, showing that causal conditions explain about 73% of the variance in motivation and job satisfaction. Furthermore, the path coefficient between causal conditions and the training and empowerment component is 0.881, with an R^2 of 0.777, indicating that causal conditions explain approximately 78% of the variance in training and empowerment. These values demonstrate that causal conditions not only directly influence productivity but also indirectly affect it through the strengthening of these two key components.

In analyzing the items contributing to motivation and job satisfaction, three items exhibit the highest path coefficients: item 8 (0.916) concerning "managers' appreciation and attention to employees' accomplishments," item 6 (0.897) concerning "sense of belonging to the organization," and item 4 (0.884) concerning "satisfaction with the work environment." These findings indicate that managerial appreciation, fostering organizational belonging, and improving the work environment are the most important factors for enhancing motivation and job satisfaction.

In the training and empowerment dimension, items 13 (continuous learning) with a coefficient of 0.909, item 12 (targeted training) with 0.908, and item 14 (specialized training) with 0.899 have the highest influence, underscoring the importance of continuous learning, purposeful training, and specialized development in enhancing employee empowerment.

Overall, it can be stated that causal conditions play a central and foundational role in improving human resource productivity in Bank Melli Iran. This multidimensional influence occurs both directly and indirectly through strengthening motivation and job satisfaction as well as enhancing training and empowerment. To achieve maximum productivity, bank management should prioritize improving causal conditions by focusing on institutionalizing a culture of appreciation, fostering organizational belonging, enhancing the work environment, developing targeted and specialized training, and promoting continuous learning. Strengthening a culture of appreciation requires establishing a formal recognition and reward system that ensures consistent and systematic acknowledgment of superior performance. This not only increases job satisfaction but also enhances employee motivation for better performance.

Additionally, fostering a sense of organizational belonging necessitates strategic programs to increase employee participation in decision-making and strengthen organizational identity. Improving the work environment is important from both physical and psychological perspectives. Providing an appropriate workspace, modern equipment, and attention to occupational safety and health, along with fostering supportive interpersonal relationships, can significantly affect productivity.

Furthermore, developing targeted and specialized training requires accurate training needs assessment and alignment of educational programs with the bank's strategic goals. Promoting continuous learning requires establishing suitable structures for ongoing training, encouraging self-learning and personal development, and implementing a knowledge management system within the organization. Collectively, these efforts, within a

comprehensive and integrated plan, can significantly enhance human resource productivity in Bank Melli Iran and improve overall organizational performance in achieving strategic goals and sustaining competitive advantage. Ultimately, success in this direction requires strong commitment from senior management, adequate resource allocation, and continuous monitoring of performance indicators.

Discussion and Conclusion

The findings of this study revealed that causal conditions—including motivation and job satisfaction as well as training and empowerment—play a fundamental and multidimensional role in shaping human resource productivity in Bank Melli Iran. The model demonstrated that causal conditions directly explained 45 percent of the variance in productivity and indirectly contributed to productivity enhancement through strong relationships with motivation and job satisfaction and with training and empowerment. These results highlight the centrality of human resource conditions and organizational climate in determining employee performance outcomes and align closely with a growing body of contemporary HRM literature. For example, the significant impact of motivational factors on employee productivity observed in this study corresponds with the findings of research emphasizing the role of employee drive, recognition, and supportive managerial practices as powerful determinants of workplace performance (1). Likewise, the high path coefficients associated with job satisfaction elements—such as appreciation, sense of belonging, and positive work environment—reinforce theoretical frameworks that position psychological well-being as a pivotal contributor to sustained productivity in organizations.

Furthermore, the relationship identified between training, empowerment, and productivity aligns with the substantial body of evidence indicating that continuous learning and professional development amplify employee competencies, autonomy, and performance. Studies in technologically evolving sectors, for instance, emphasize that structured competency development and digitally enhanced HRM systems significantly contribute to improved employee outputs (17). This convergence of findings reinforces the assertion that productivity is not merely a function of individual capability but also reflects the organizational structures and support systems that facilitate employee growth.

The strong explanatory power of causal conditions for the motivation–job satisfaction dimension (73 percent) and training–empowerment dimension (78 percent) parallels the insights provided by strategic HR planning research, which argues that organizational productivity is maximized when internal conditions—such as clarity of roles, fairness in performance evaluations, and access to continuous learning—are optimized (13). In addition, empirical studies in educational and governmental institutions similarly assert that cultural capital, organizational learning, and supportive managerial behaviors enhance employee morale and satisfaction, ultimately leading to higher productivity (7). These results affirm that employee productivity emerges at the intersection of psychological, structural, and skill-based factors.

The study's emphasis on appreciation, recognition, and supportive management as the most influential elements of motivation echoes findings from research demonstrating that organizational climate, leadership behavior, and recognition systems are critical determinants of productivity across diverse workplaces. For example, studies on service-oriented sectors such as air traffic control highlight that appreciation and managerial acknowledgment reduce job stress and increase job satisfaction, thereby indirectly enhancing productivity (2). Similarly, research from the Indian banking sector shows that supportive HRM practices, clear reward systems, and fair evaluation

mechanisms positively correlate with enhanced organizational performance (15). These parallels indicate that recognition-oriented human resource practices are universally valuable, regardless of sector or national context.

The results also align with research conducted in sports and educational institutions, where structured reward systems and participatory environments significantly contribute to improved performance outcomes. Productivity models developed for specialized contexts—such as the Deaf Sports Federation—illustrate that when employees feel valued, supported, and empowered, productivity outcomes rise substantively (5). The findings of this study thus confirm that fostering a culture of appreciation and belonging is essential not only in competitive sectors but also within public institutions and large-scale organizations like Bank Melli Iran.

The strong predictive relationship between training, empowerment, and productivity further validates theories that position learning and capability-building as foundational to high-performing human resource systems. Studies in the era of digital transformation underscore the importance of continuous training, digital literacy, and adaptive competencies in preparing employees to navigate rapidly evolving work environments (4). In technologically intensive sectors such as petrochemicals, innovation-oriented human resource capabilities have been identified as key drivers of sustainable productivity (9). These findings parallel the results of the present research, which demonstrate that targeted training, specialized skill development, and continuous learning significantly contribute to enhanced employee performance in banking institutions.

Moreover, the identified influence of organizational belonging and work environment satisfaction reinforces the broader literature on employee well-being and its impact on performance. Research in public and private sectors suggests that psychological attachment to the organization increases commitment, reduces turnover intentions, and enhances overall productivity (3). Likewise, studies on microenterprise employees show that competency development and organizational support substantially influence work productivity (12). These observations indicate that the mechanisms linking psychological climate to productivity are robust across various organizational environments, validating their relevance to large financial institutions.

Interpretive structural modeling studies, such as those exploring entrepreneurial thought patterns, also emphasize that employee productivity is shaped by cognitive and environmental factors that reinforce one another (10). This aligns with the present study, which shows that both psychological (e.g., motivation, satisfaction) and structural (e.g., training, empowerment) dimensions are necessary for optimizing human resource productivity. Additionally, organizational productivity reviews suggest that integrating psychological, structural, and technological variables into a holistic model is essential for accurate assessment and improvement of human resource functions (14). The present findings contribute further empirical support to this approach.

Studies in strategic human resource management within banks reaffirm the importance of well-designed HR structures, equitable reward systems, and long-term sustainability-oriented strategies in shaping productivity outcomes. Research in Maskan Bank highlights the need for HR models that integrate sustainability, role clarity, and strategic alignment to enhance productivity (16). These insights closely mirror the findings of the present investigation, which underscore the need for Bank Melli Iran to establish and strengthen strategic HR practices that enhance both individual-level motivation and systemic capacity-building mechanisms.

Additionally, research on human resource accounting and productivity reinforces the idea that employee development, empowerment, and fair compensation contribute significantly to organizational performance (18). This demonstrates that productivity improvements must be accompanied by policies that accurately value and support human capital. Parallel studies in physical education departments also highlight the need for accountability-driven

productivity management systems that integrate financial, structural, and human resource components (8). These findings resonate with the central argument of this study, which holds that productivity enhancement requires attention to both procedural and human-centered factors.

Taken together, the present study's results corroborate existing theories and empirical findings across diverse organizational contexts, demonstrating that motivation, job satisfaction, training, and empowerment are critical determinants of human resource productivity. The findings also expand the literature by providing a contextualized model for understanding human resource productivity in one of Iran's largest banking institutions. The alignment between empirical results and previous research underscores the robustness of the model and highlights the importance of multi-level interventions to enhance productivity in complex organizational environments.

This study, although comprehensive in scope, is subject to several limitations. The sample was restricted to employees of Bank Melli Iran, which may limit the generalizability of results to other financial institutions or organizational sectors. The cross-sectional design prevents causal inference beyond the observed associations. Additionally, self-reported measures may be influenced by social desirability or response bias, potentially affecting the accuracy of the findings. Finally, qualitative data were dependent on participants' willingness to share experiences, which may have constrained the depth of thematic exploration.

Future studies could incorporate longitudinal designs to examine productivity changes over time and to validate causal pathways more rigorously. Comparative studies across multiple banks or between public and private institutions would enhance generalizability and deepen understanding of structural differences. Researchers could also incorporate objective performance indicators alongside perceptual measures to obtain a more comprehensive assessment of productivity. Future models may also benefit from integrating technological competence, emotional intelligence, and organizational resilience as additional mediating variables.

Organizations should prioritize designing comprehensive HR strategies that integrate motivational enhancement, employee recognition, and supportive leadership practices. Investment in continuous professional development and targeted training programs can significantly elevate employee competencies. Institutions should promote a culture of belonging, collaboration, and appreciation to strengthen employee commitment and performance. Finally, managers should continuously monitor organizational climate and adjust HR policies to align with employee needs and evolving workplace demands.

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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

All ethical principles were adhered in conducting and writing this article. This study was conducted in accordance with the ethical principles of scientific research under the supervision of the Ethics Committee of Islamic Azad

University, with the ethical approval code IR.IAU.SARI.REC.1403.353, as part of a doctoral dissertation in Public Administration, Organizational Behavior, at Sari Branch. Participants took part in the research voluntarily and with full informed consent, and their information was kept confidential. The results of this study were used solely for scientific purposes, and no names or personal identifiers of the participants were disclosed.

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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